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EQUITY, QUALITY AND INTEGRITY IN HEALTH



**THE TASK FORCE ON HEALTH & FAMILY WELFARE
GOVERNMENT OF KARNATAKA
APRIL 2001**

FOCUS ON PRIMARY HEALTHCARE AND PUBLIC HEALTH

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Final Report of the TFHFW

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Towards Equity, Quality and Integrity in Health

Final Report of the
Task Force on Health and Family Welfare

TASK FORCE ON HEALTH AND FAMILY WELFARE

Government of Karnataka

PHI Building, Sheshadri Road,

Bangalore - 560 001

Ph : 2271021, 2274883 E-mail : khmdp@vsnl.com

Towards Equity, Quality and Integrity in Health

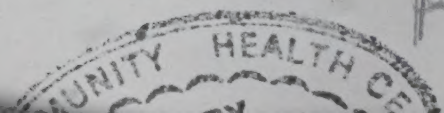
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PREFACE

The Task Force on Health and Family Welfare is happy to present this Final Report. It would be recalled that the Task Force had presented an Interim Report in April 2000. It made recommendations therein which, the Government of Karnataka, we are pleased to record, received with appreciation, and more importantly, acted upon. The issues of concern and key messages of that Report have been considered and studied further in greater detail, against the backdrop of a vision for better health in the State. The conclusions of the deliberations on these issues are presented in this Final Report.

At first sight, the recommendations may seem rather detailed, extensive and wide ranging. However, in view of the importance of health as probably the most important element in the effort to achieve an acceptable standard of quality of life for all, the consideration of issues had to cover all aspects of the health services and closely inter-related sectors of development. It is rarely that such an opportunity arises, which permits examination of issues in full of the health services and in conjunction with the sectors that lend these services strength and support. A holistic view of health services as an integral part of the entitlement of the people to basic services has, therefore, been taken. Consequently, this Report has considered the content, quality and reach of health services, and administrative and management issues in the social and economic context of the State.

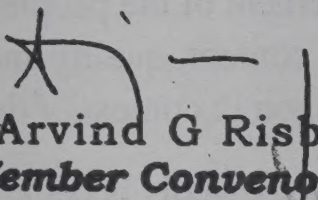
In the course of examination of the issues relating to health services it has repeatedly become apparent that the key factor that influences the efficiency of these services and ensures the social accountability of the system is the issue of governance. It is apparent that professional skills, financial allocations and departmental infrastructure, important as they doubtless are, can contribute to performance only up to a point. The core issue, however, remains the motivation and commitment of the staff. There is need to nurture the young health professional and other allied health workers, supervising and facilitating them. There is also the need to institutionalise discipline tempered with morale building, peak performance and accountability to the public, together with the involvement of the people in attaining and maintaining their own health. The recommendations on restructuring of the health services have been made keeping these essential parameters in view. It is appreciated that the recommendations call for basic structural changes. They have been made in the full confidence that such changes are not merely desirable, but essential, and would be viewed by those in the system in this light.

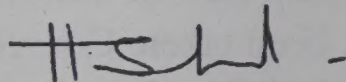
It is recognised that the examination and implementation of many of these recommendations by Government would take some time. Others can be implemented without delay, as had been done for the short term recommendations. It is hoped, and indeed urged, that the same sense of urgency and concern on matters relating to health, that induced the constitution of this Task Force, would continue to prevail, and that no time would be lost in establishing mechanisms for implementation of the recommendations. Such a mechanism has been suggested in the Report. Priority in setting up these mechanisms is urged. As responsible and responsive persons, the members of the Task Force would be happy to contribute their expertise in this effort. As an effective measure for implementation of these recommendations and for monitoring implementation and generally to further the objectives of rapid improvement of the health services, the early constitution of the Commission on Health recommended herein is urged.

The Task Force has attempted to cover as much ground as possible. However, it need hardly be emphasised that many aspects would still need consideration. At best, what has been presented is a detailed blueprint. This

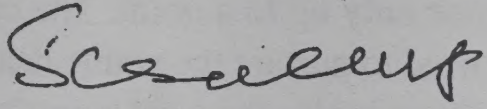
would have to be built upon by those who constitute the health services and, therefore, have direct functional responsibility. In fact, one looks forward to an internalisation of the recommendations and their improvement by those within the system. The Task Force had numerous occasions to have detailed discussions with members of the Health Services at various levels and exchanged ideas and views freely. We look forward to their active and total involvement for quantitative and qualitative improvement in the system. This would be the test of total acceptance of the need for change, and change at a quick pace.

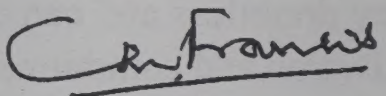
The recommendations made therein have been welcomed enthusiastically and many of them have been implemented by the Government in a short span of time. This response evokes confidence in the Task Force that the recommendations made in this **Final Report** would be implemented in the same spirit in which they have been made, namely of concern for the health of the people of the State and their welfare. Once these recommendations are implemented, the health services in the State will achieve both professional competence and efficiency of a high order, with equity, so as to serve the people of the State to their full expectations, contributing to the enhancement of their quality of life.

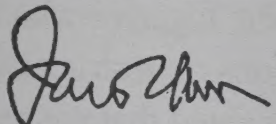

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Member Convenor

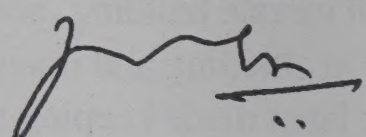

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Chairman

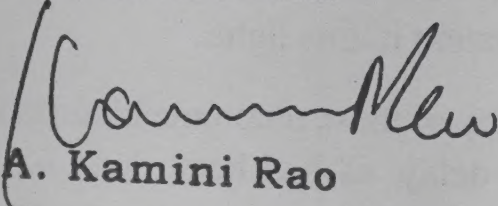
Members:

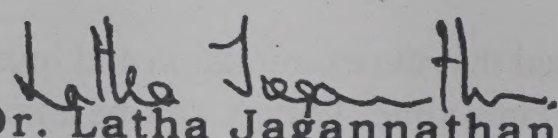

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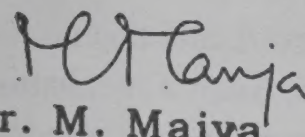

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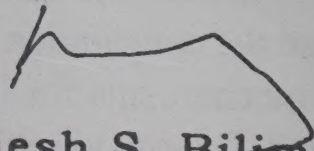

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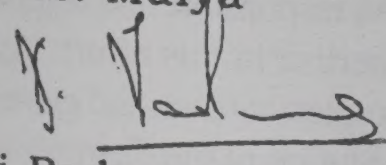

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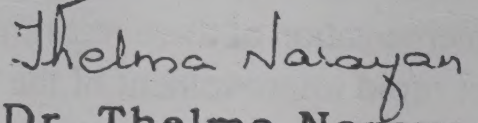

Dr. A. Kamini Rao

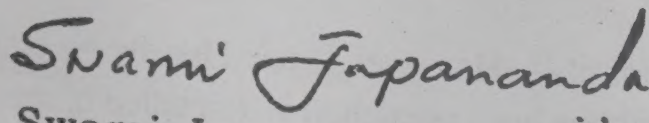

Dr. Latha Jagannathan


Dr. M. Maiya


Dr. Ramesh S. Bilimagga


Sri Padmanabha. P


Dr. Thelma Narayan


Swami Japananda

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The Task Force is very happy to record its gratitude for our Hon'ble Chief Minister, Sri S.M. Krishna for giving the opportunity to prepare this report on Health and Family Welfare, with Equity, Integrity and Quality, so as to take measures to enable the more than fifty two million people of our State to be more healthy.

We are grateful to our Hon'ble Minister for Health and Family Welfare Dr. A.B. Maalaka Raddy, for his advice and guidance and the Hon'ble Minister of State for Medical Education, Ms. Nafees Fazal, for her suggestions and views in formulating the Report.

We are thankful to Dr. B. K. Chandrashekar, Minister for Information for his valuable suggestions for health promotion and improved transparency.

We wish to thank Sri. Abhijit Sen Gupta, former Principal Secretary for Health, for his intense interest and involvement and for the efforts and time spent in discussions with the Task Force.

We express our gratitude to Sri A.K.M. Naik, Principal Secretary, Health, for his great advice in improving the impact of the Report.

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We are thankful to Dr.S. Subramanya, former Project Administrator, KHSDP, Sri G.V.K. Rao, Project Director, IPP IX and the officers of KHSDP, IPP IX and IPP VIII.

We thank Dr. G.V. Nagaraj, Director, Department of Health and Family Welfare Services, Dr. Seethalakshmi, Director, Medical Education, the Director, State Institute of Health and Family Welfare, the Drugs Controller, the Additional, Joint and Deputy Directors and the other officials of the various Directorates for their active participation.

We are thankful to the Secretaries, Directors and other officials of the allied departments for their valuable help and co-operation. We wish to thank Sri. Gautam Basu, Joint Secretary, RCH, Smt. Shylaja Chandran, Secretary to Govt., Dept. of ISM&H and other officials of the Central Government, who have given their suggestions.

We are thankful to the members of the Task Force for the discussions and sharing their views on the health of the people.

We thank the large number of experts and representatives of organisations, associations, institutions and the public who have personally discussed matters of interest or sent letters to us, for effective improvement of the health of the people.

We are thankful to the staff of the Task Force on Health and Family Welfare, Dr. N. Girish, Dr. Deepak M.G., Mrs. Lakshmi C. and Mr. B. Shivalingaiah for their efforts in handling various aspects of providing this report.

We are sure that this list is incomplete. To all those who have helped us in preparing this report, our heartfelt thanks. Together, we will make Karnataka march forward in its quest for better quality of life.

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GLOSSARY

ABC	Airway, Breathing, Circulation	KHSDP	Karnataka Health System Development Project
ADR	Adverse Drug Reaction	KMIO	Kidwai Memorial Institute of Oncology
AFB	Acid Fast Bacilli	KFD	Kyasanur Forest Disease
ANM	Auxillary Nurse Midwife or Junior Health Assistant (Female)	KSAPS	Karnataka State Aids Prevention Society
ARI	Acute Respiratory Illness	LCC	Leprosy Control Centre
BCSC	Blood Component Separation Centre	LDL	Low Density Cholesterol
BCG	Bacille Calmette Guerin	LEB	Life Expectancy at Birth
BHI	Bureau of Health Intelligence	LFT	Liver Function Test
BMP	Bangalore Mahanagara Palike	MCH	Maternal & Child Health
BT	Bleeding Time	MCI	Medical Council of India
CBR	Crude Birth Rate	MLA	Member of Legislative Assembly
CDR	Crude Death Rate	MLC	Member of Legislative Council
CFTRI	Central Food Technology and Research Institute	MMR	Maternal Mortality Rate
CHC	Community Health Centre	MP	Malaria Parasite
CNA	Community Needs Assessment	MTP	Medical Termination of Pregnancy
CSW	Commercial Sex Worker	NABL	National Association of Biological Laboratories
CT	Clotting Time	NAMP	National Anti Malaria Programme
C&R	Cadre and Recruitment	NACO	National Aids Control Organisation
DALY	Disability Adjusted Life Years	NFHS	National Family Health Survey
DC	Differential Count	NGO	Non-Governmental Organisation
DHO	District Health Officer	NIMHANS	National Institute of Mental Health & Neurosciences
DHFWS	Directorate of Health & Family Welfare Services	NIB	National Institute of Biologicals
DHF/DSS	Dengue Haemorrhagic Fever / Dengue Shock Syndrome	NNMB	National Nutrition Monitoring Bureau
DISM&H	Directorate of Indian Systems of Medicine & Homoeopathy	NPCB	National Programme for Control of Blindness
DLDS	District Level Disease Surveillance System	NRR	Net Reproduction Rate
DMHP	District Mental Health Programme	NTI	National Tuberculosis Institute
DME	Directorate of Medical Education	NTP	National Tuberculosis Programme
DOTS	Directly Observed Therapy, Short Course	ORS	Oral Rehydration Solution
ELISA	Enzyme Linked Immunosorbant Assay	PAHO	Pan American Health Organisation
ENT	Ear, Nose, Throat	PD	Project Director
ESI	Employee State Insurance	PDS	Public Distribution System
ESR	Erythrocyte Sedimentation Rate	PHA	People's Health Assembly
EQA	External Quality Assessment	PHC	Primary Health Centre
FOGSI	Federation of Obstetrics & Gynaecologists Societies of India	PHU	Primary Health Unit
FRU	First Referral Unit	PHI	Public Health Institute
GHI	Gender related Health Index	PLWA	People Living With Aids
GMP	Good Manufacturing Practice	PRA	Participatory Rural Appraisal
GMS	Government Medical Stores	RCH	Reproductive and Child Health
GIS	Geographical Information System	RGUHS	Rajiv Gandhi University of Health Sciences
HDL	High Density Cholesterol	RNTCP	Revised National Tuberculosis Control Programme
HDI	Human Development Index	RTI	Reproductive Tract Infection
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immuno Deficiency Syndrome	RUD	Rational Use of Drugs
HMIS	Health Management Information System	SC & ST	Scheduled Castes and Scheduled Tribes
IAP	Indian Association of Paediatrics	SGPT	Serum Glutamate Pyruvate Transaminase (ALT)
ICMR	Indian Council of Medical Research	SGOT	Serum Glutamate Oxaloacetate Transaminase (AST)
ICDS	Integrated Child Development Services	STI/STD	Sexually Transmitted Infection / Sexually Transmitted Disease
IEC	Information, Education, Communication	SRS	Sample Registration System
IFA	Iron and Folic Acid	TFR	Total Fertility Rate
IMA	Indian Medical Association	TTD	Transfusion Transmissible Disease
IMR	Infant Mortality Rate	UIP	Universal Immunisation Programme
ISM&H	Indian Systems of Medicine & Homoeopathy	UTI	Urinary Tract Infection
IPP	India Population Project	UFWC	Urban Family Welfare Centre
IQC	Internal Quality Control	VDRL	Venereal Disease Research Laboratories
JD	Joint Director	VO	Voluntary Organisation
JE	Japanese Encephalitis	WHA	World Health Assembly
KAPL	Karnataka Antibiotics and Pharmaceuticals Limited	WHO	World Health Organisation
		ZBTC	Zonal Blood Testing Centre
		ZP	Zilla Panchayat

THE PROCESS

The Government of Karnataka under the leadership of the Chief Minister, Sri S M Krishna, constituted the Task Force on Health and Family Welfare with Dr. H. Sudarshan as Chairman.

The terms of reference were broad and included:

1. Suggestions for improvement of Public Health in the State;
2. Proposals for stabilization of the population;
3. Recommendations to improve management and administration of the Department of Health and Family Welfare;
4. Recommendations for changes in the education system covering both Clinical and Public Health; and
5. Monitoring the impact of the recommendations, especially in the initial stages of implementation.

The process adopted has been **participatory** in nature. The deliberations have been undertaken with the spirit of inclusion and involvement.

The Task Force had 59 sittings starting on 21st December 1999. The Principal Secretary, Health and Family Welfare, addressing the members made it clear that the Task Force may deliberate on any issue it feels concerned about, apart from those mentioned in the terms of reference and invite any person who can contribute to the deliberations.

The Task Force formed subgroups, to consider the issues better. The meetings of the subgroups, which often invited many outside experts, were very productive. The Task Force has attempted to review the situation with the implementers, experts, policy and decision-makers, administrators, and the public. Many individuals, organizations and associations have been consulted. The consultations included:

- a) Dr. A B Maalaka Raddy, Minister of Health and Family Welfare, Karnataka and Smt Nafees Fazal, Minister of State for Medical Education, Karnataka
 - b) Prof. B. K. Chandrashekar, Minister for Information, and the Secretary and Director, Information
 - c) The Principal Secretary (Health), Government of Karnataka; The Secretary, Medical Education, Government of Karnataka; The Commissioner for Health and Family Welfare; The Project Administrator – Karnataka Health Systems Development Project; The Project Director - India Population Project IX; The Deputy Secretary, Health.
 - d) The Directorates of Health and Family Welfare Services, Medical Education and Indian Systems of Medicine and included the Directors and other Officials from the State, District, Taluka and Primary Health Centre Level.
 - e) The Joint Secretary, Health and Education and Health Officials from Bangalore Mahanagara Palike - The Health Officer and the Project Co-ordinator, India Population Project VIII.
 - f) Representatives from the Professional Bodies: Karnataka Medical Council, State Councils for Indian Systems of Medicine and Homeopathy, Dental, Nursing and Pharmacy, Indian Medical Association, Karnataka State Pharmacy Council, Associations of Karnataka Government Medical Officers, Ayurvedic
-

Physicians, Medical and Dental Teachers Association, Contract Doctors, Integrated System of Medicine, Federation of Obstetrics and Gynaecological Societies of India, Indian Academy of Paediatrics, Junior Doctor's Association.

- g) Representatives from Voluntary Organisations and Associations networking in the area of Health - Voluntary Health Association of Karnataka, Catholic Health Association of India-Karnataka, Christian Medical Association of India, Society for Service to Voluntary Agencies - Karnataka Chapter, Federation of Voluntary Organisations for Rural Development in Karnataka, Family Planning Association of India, Community Health Cell, AIDS Forum Karnataka, Foundation of Organ Retrieval and Transplant Education.
- h) Representatives from Autonomous / National and Premier Health Institutions of Karnataka: National Institute of Mental Health and Neuro Sciences, National Tuberculosis Institute, Regional Occupational Health Centre, Kidwai Memorial Institute of Oncology, National Institute of Virology, National Institute of Communicable Diseases, Regional Office of Health and Family Welfare, National Law School of India University, Malaria Research Centre, Indira Gandhi Institute of Child Health, Institute of Social and Economic Change, Sanjay Gandhi Accident Hospital and Research Institute.
- i) Representatives of Corporate Hospitals, Teaching Hospitals, Private Hospitals and Association of Nursing Homes and Private Hospitals.
- j) The members of the World Bank team during their visits to Bangalore.

Health determinants are multidimensional and multi-sectoral. An interaction was undertaken with sectors, which influence Health. They included the Departments of Women and Child Welfare, Education, Agriculture, Urban Development, Food and Civil Supplies, Social Welfare, Environment, Ecology and Forests, Rural Development and Panchayat Raj. Another important area of Interaction was with representatives of Consumer Groups, Women's Organisations, Civic / Citizen Groups, Peoples Organisations and Movements and Corporate Bodies.

Recognising the crucial role of **Print and Electronic Media** consultation was held with representatives of the media. Press releases were made in the National, State and local Newspapers both in Kannada and English, requesting the Public to contribute towards the deliberations of the Task Force.

Experts both within the State and outside were invited to share their concerns and suggestions for improvement of health. The response has been wonderful. A very large number of persons have given their views and suggestions. These have been very useful.

Elected representatives are the Policy and decision makers. An interaction- discussion was scheduled with the **MLAs, MLCs and ZP members**. Letters were also addressed to all the MLAs, MLCs and Zilla Panchayat Presidents requesting them to contribute towards the deliberations of the Task Force. Sri P G R Sindhia, MLA and formerly Health Minister, Karnataka, met the Task Force, while Sri Kariyanna, MLA, Sri Cheluvanarayana swamy MLA, Sri Chikkamadanayaka, MLA, and Sri Ramesh Kumar Pande, MLA and Sri Neelakantha Rao Deshmukh Garmpalli, President Zilla Panchayat (Gulbarga) sent their views in writing.

An attempt was also made to study the policies and provisions for Health Care Delivery in **other States** of our country by dispatching request letters to the Health Secretaries of the States and Union territories of the Union of India.

The Task Force was happy to meet and interact with the Secretary to Health, Indian Systems of Medicine, Government of India.

The members of the Task Force individually or in groups **visited the different districts** to interact and understand the ground realities. Discussions were held with the Zilla Panchayat members, Chief Executive Officers, District Health Officers, District Surgeons, Taluka Health Officers, Primary Health Centre staff and the public. In addition, detailed interactions were held with the District Health Officers and District Surgeons during their monthly meeting. Members of the Task Force also **visited some of the institutions**. The Task Force conducted 9 Research studies in collaboration with KHSDP on re-organisation of the Health Department, training, financing, people's perception of health services, health education and disparities in the health status.

The members of the Task Force, individually or in groups, participated in various discussions where health was the subject for discussion. These were fruitful in expanding the horizon.

The above efforts of the members of the Task Force **provided a large body of information and evidence**. The process brought forth various issues and concerns. Some required simple interventions. Some related to the structural changes and policy decisions. These needed much more detailed study and have long term implications.

Recognising and realising that each one of us can contribute towards ensuring **equity, integrity and quality** in health for all of our people, this Final Report is presented. The suggestions and recommendations herein have been discussed with the Secretaries to the Government, and the Directors of Health and Family Welfare, who have to take action to implement them.

The Terms of reference also gives the Task Force the mandate for monitoring the implementation of its recommendations and the outcome. The Task Force had a number of meetings with the Principal Secretary, Health and Family Welfare, the Commissioner for Health, Secretary, Medical education and the Directorates on the progress of implementation of the short term recommendations contained in the Interim Report. Detailed notes were also received. The Chairman and the Members of the Task force had visited the District, Taluka and peripheral health care institutions and observed the changes. The Task Force is happy that the short-term recommendations have received serious consideration and many of them have been implemented. (The report on the implementation, as on March 20001, is given in the supplement to this Final Report).

The Final Report is given with full confidence that the recommendations given herein will be implemented expeditiously, to bring out marked improvement in the health of the people. The process of inquiry and consultations followed by action have to continue till the goal of health for all is achieved.

STRENGTHS AND ACHIEVEMENTS OF KARNATAKA'S HEALTH SYSTEM

Karnataka has done well in many aspects of Health. But, there have been areas where it has not performed as well as it might have. Hence, Karnataka has been often described as an "average" State with respect to the health of its people. There are many strong points of which Karnataka can be happy about. The Task Force has tried to identify these areas of strengths and build on them. But, there are also many issues and areas of concern. The Task Force has interacted and deliberated and will continue to address them. A few key messages have come out of the deliberations, reflections and suggestions from within the Health System and outside it.

The Government of Karnataka has over the last few decades taken measures to improve the health and wellbeing of its citizens in line with the constitutional pledges, National Health Policy guidelines and the State's own policy initiatives. The Task Force through all its interactions and reviews to date identified the following areas of strength and health care issues on which the State has achieved a great deal. By recognising them the Task Force hopes to indicate the context and base on which a comprehensive and people oriented Health Policy can be enunciated and put into action.

1. Karnataka State has emerged as having an overall health status and health care delivery system **above the national average** inspite of some continued inter-regional disparities.
2. A **wide network of Health Care Institutions** – primary, secondary and tertiary levels - have been established in the State on a planned basis using population norms. They provide comprehensive health care and the services are utilised more by the poor.
3. State policies have fostered the establishment and running of Medical, Nursing and other **health professional educational institutions**. A large number of Doctors and Nurses and other health manpower have been trained. The establishment of the **Rajiv Gandhi University of Health Sciences** has brought under one umbrella over 240 educational institutions training health manpower for the State. This augurs well for the evolution of a more relevant, rational and need based Health manpower development for the State. Trained graduates from these institutions whether working in the public / private / voluntary sector have increased access to health care.
4. There has been an overall **improvement in the health status of the people evidenced by**
 - Increased Life Expectancy at Birth from 26 years in 1947 to 66.3 years for women and 65.1 years for men in 1997.
 - Decline in Crude Birth Rate from 41.6 to 22.7 / 1000 population from 1961 to 1997.
 - Decline in Crude Death Rate from 22.2 to 7.6 / 1000 population from 1961 to 1997.

Infectious Disease

- **Eradication** of smallpox, plague in humans, and most recently guineaworm infestation.
- Control to a considerable extent of **Vaccine Preventable Diseases** such as polio diphtheria, whooping cough, tetanus and to a smaller extent measles.

Family Welfare

- The effective **Couple Protection Ratio** has increased from 23.8% in 1981 to 57.7% in 1997
5. Some of the other policies and initiatives in the State:
- The **Externally Aided Projects** have contributed to the infrastructure available for health care delivery and to the efficient and effective work cultures.
 - The **Community Mental Health** initiative in Bellary
 - The State has been entering into **partnership with Voluntary Organisations** for the more efficient and effective running of Primary Health Centres.
 - The State has also made available **anti-tubercular drugs** to fight the menace of Tuberculosis in the entire State.
 - The State has brought out the report on **Human Development in Karnataka, 1999**

These indicate the **growing sensitivity** to Health care needs and addressing the formidable challenges of Equity in Health and Development.

6. Karnataka has in the past regularly invited participatory evolution of Health Care initiatives and **dialogue** with professionals and voluntary organisations. The involvement of NGO's has been sought in the past in the Development of the **perspective plan** for Government of Karnataka (1989-2004); the preparation of the plan documents and brainstorming on other policy initiatives as well.
7. Perhaps the greatest strength seems to be the **increasing openness and receptivity** among the health policy makers – both bureaucrats and technocrats - to ideas and suggestions from a wide cross-section of professional and public opinion.
8. The State has the ability to respond quickly to suggestions for change (Note : Response to short-term recommendations of the Task Force)

ISSUES OF CONCERN AND AN AGENDA FOR ACTION

Over 14 months, the Task Force on Health and Family Welfare, Karnataka has had the benefit of a very wide range of interactions and discussions with a large number of health care providers, decision makers, policy makers, representative of professional associations, voluntary and private sector health care organizations, elected representatives of the people, representative of citizens groups and the community. These discussions were open and frank, in a spirit of dialogue and very constructive. Concerns were shared and suggestions and ideas to improve the health care system in Karnataka were freely given. Many of these have been included in the different chapters included in the final report.

There are some major concerns and cross cutting themes that affected all aspects and sectors of health care. These need to be tackled on an urgent and sustained manner through what we have suggested as an Agenda for Action. Many of these factors are not specific to the health care system itself. They are also problems of the larger society within which our efforts in health care are located. Therefore they impinge and distort our efforts to evolve a health care system that is committed to **equity, quality and integrity** with a special focus on **primary health care and public health**. We need to tackle them seriously.

1. Corruption

Throughout the discussions, the task force was informed through a wide variety of sources of the widespread and growing 'corruption' at various levels of the system and in all aspects and sectors of health care. This took many forms.

- **Monetary considerations for appointments, promotion and transfer.**
(Every level had a price and a hierarchy of amounts depending on importance of job.)
- **Corruption at the time of selection of candidates for educational institutions / programmes and at the level of examinations.**
(The process had become so vitiated that students are now paying not to pass but to prevent being failed. Even awards and distinctions had a price.)
- **Monetary factors distorting access and utilization of health care services at different levels.**
(Whether it is a charge for a sputum cup for a tuberculosis patient, or to get facilities in an urban or rural health centre; or taluka hospital for an emergency surgery; or even just to see a newborn baby in a corporation hospital with rates for male babies exceeding that for female babies! Monetary demands for routine services that are supposed to be free are rampant).

While such widespread corruption is nowadays often passed off as a worldwide phenomena; or as being linked to our political system and its funding mechanism, and so on, it is essential that the leadership of the state at all levels be committed to tackling this problem and **move actively towards a zero-tolerance level**. We have particularly been encouraged at steps including counselling during recent appointments made after the Interim report, during which monetary transactions did not play a role.

Agenda for Action

- a. *We suggest a 'vigilance system' in the directorate and health ministry that will monitor and help*

proactively counter this widespread problem. (See section on Administration) We believe there is already political and bureaucratic will, as demonstrated by decisions taken on our interim recommendations and by the recommendations of the Administrative Reforms Committee.

- b. *We also suggest that senior leadership of the health care system should discuss and monitor this issue so that a new climate against corruption is built up proactively at all levels.*

2. Neglect of Public Health

There is an overall neglect of public health principles and practice in planning, organisation and management of health care services, and this has shown worsening trend. The neglect is symbolized by

- Inadequate emphasis on tackling the determinants of ill health particularly **nutrition, water supply and sanitation, housing, literacy and poverty alleviation**, which are crucial to public health and were even identified as early as in 1946 in the Bhore committee blue print that was accepted by independent India as a framework for health service development. Further by compartmentalization of the ongoing efforts in these directions by different departments and ministries, the intersectorality of all these with basic health has been lost.
- The key to good public health is a robust **health information system** which monitors both the health status indicating problems and health care inputs and outcomes, supported by an efficient epidemiological, microbiological and entomological surveillance system. In spite of so many projects and programmes, the quality, reliability and scientific validity of all the data that is being routinely collected and published leave much to be desired, it is another aspect of this overall neglect.
- The overall lack of emphasis on **preventive, promotive and rehabilitative care**, except perhaps for some focus on immunization and family welfare and some relatively inefficient nutritional supplementation is another key factor. Curative care and the increasing privatization and commercialization has resulted in over 65% of health care being in the private sector today, mostly unregulated and unrepresented in the State's 'health monitoring' or health planning systems.
- In addition, health education has been neglected at all levels and rational drug management policies not adequately addressed.
- In spite of the presence of good **public health resource persons** in the state, public health cadres have neither been nurtured nor strengthened. Also at different levels of health care, decision makers with no skill or capacity in public health policy making have been allowed to make decisions that have therefore supported individualized curative care or the market economy of medicine, rather than sound public health.

Agenda for Action

- a. *There is urgent need for strengthening public health competence and skill at all levels of the system to improve **health for all** without distinction or discrimination. This must include a two pronged approach.*
- *All decision makers at all levels beginning from the medical officer of a primary health centre to the leadership both technocratic and bureaucratic at the state directorate level, need to be given **short public health orientation and skill development** as a ongoing continuing education process for capacity development.*
 - *Public health competence through relevant training for Diploma, MD, Masters and Doctoral programmes should be built up and a cadre of **public health consultants / specialists** should*

be built up who will take over health planning decisions making in the state over a period of time. These must have the competence to make a broad social – economic - cultural – political situation analysis of the health and health care situation, and be skilled in the challenges both technological and managerial, to address the problem through good team work and empowered community participation.

b. As a complementary action, the agenda will focus on:

- *determinants of health;*
- *comprehensive health information system and surveillance; and*
- *preventive, promotive and rehabilitative aspects of every priority problem must become the sheet anchor for health planning and service development in the state.*

This will again mean a proactive reorientation effort at all levels of health care administration and in all the training programmes geared to producing health human power for the health care system.

3. Distortions in Primary Health Care

Though the state has promoted primary health care, this has not been well defined at policy level and has been, additionally distorted by various factors which include:

- **Inadequate** efforts to involve the people in the health planning and management process so that **community participation** if at all has been very passive and adhoc.
- Increased **verticalisation** and **selectivisation** of programmes at the cost of more integrated and comprehensive approaches and at the cost of greater flexibility and local planning effort. Externally aided projects have contributed particularly to this verticalisation and selectivisation.
- Inadequate preparation to empower the evolving **Panchayatraj system** to participate and be actively involved in health decision making at community level.
- Lack of adequate involvement of **general practitioners; local healers and healing systems; voluntary agencies; NGO's and civic society and the private sector** in complementing and supplementing the governments primary health care system.
- Lack of development of **appropriate technology** and very slow up-gradation of the technological competence of the health care system at the primary care level.
- Increased **compartmentalisation** of health care from **intersectoral action** that is so crucial to address the deeper determinants of health, and lack of integral linkages with nutrition programmes including the ICDS scheme; the school system; the cooperative movement; poverty alleviation and development programmes; water supply and sanitation programmes; and women's credit cooperatives.

Not surprisingly the comprehensive concept of **primary health care including focus on equity; appropriate technology; intersectoral action; and community participation** has been diluted or nearly forgotten.

Agenda for Action

- a. There is urgent need to reiterate the commitment to primary health care as a core principle of health care service development in the state at all levels and sectors within the directorate and the ministry and its associated institutions.*

- b. *There is need to improve orientation and capacity for the promotion of primary health care by improving quality of primary health services by strengthening human power resources, maintenance, logistics and supplies and supportive referral systems.*
- c. *Simultaneously the strengthening of the community partnership in the ownership and management of the programme should be undertaken orienting and involving Panchayatraj institutions actively in the process.*
- d. *A complementary strategy to involve and enhance the participation of local community organisations, voluntary agencies and NGO's; local practitioners of all systems of health care including folk healing traditions, must be actively promoted.*
- e. *Finally the crucial intersectoral linkages required to address the determinants of health - income, gender, literacy, housing, water supply and sanitation and environmental pollution and make the primary health care system more integrated and comprehensive, must be urgently promoted*

Making primary health care work must be a renewed commitment.

4. Lack of Focus on Equity

There is growing evidence that inequalities in health between regions and districts of Karnataka and between groups within our society / community are *widening* and despite some efforts the present health care system and programmes do not address these inequities adequately.

The inequities identified are

- The northern districts of Karnataka especially the seven districts (category C) have the lowest figures for most health, development and social indicators. Certain talukas in some of the southern districts also show poor development indicators.
- Rural - urban differentials continue to exist and are also widening.
- Gender discrimination is seen in the continuing neglect of the girl child, the increase in female foeticide (sex linked selective abortion); continuing disparity between male and female malnutrition; violence against women; and lower access to care.
- The gaps between the scheduled caste and tribes (SC / ST) sections of the population, and the rest including other backward castes (OBC's) continue to exist, in spite of programmes trying to address this caste / ethnic inequity.
- Other neglected groups in our society include growing numbers of the elderly; continuing numbers of working children including increasing numbers of street children; people with disabilities and a large group of people socio-economically or socially marginalised through a variety of factors in our society.

Inadequate responses to tackle these continuing or growing inequities is an important concern. The lack of focus on equity and disparities is further complicated by inadequate monitoring of these inequities and the continuing lack of disaggregated data to help understand the situation and mount more focussed responses.

Agenda for Action

- a. *There is urgent need to address the equity issue by establishing a health monitoring system that focusses on regional disparities, gender inequalities; class and caste / ethnic inequalities; the geographical (rural / urban) divide and collects disaggregated data.*

- b. *Equity as a policy imperative must be built into the situation analysis; the goals of the health policy and health care system, and the monitoring of inputs and outcomes. When equity becomes a crucial indicator of health care process then suitable responses will emerge in the health planning and implementation process. Special packages for the seven category C districts; scheduled castes and tribes; women; and other vulnerable groups are required, besides an overall focus on improving rural health care. The best administrative and management expertise must be utilised to work on these areas.*

5. Implementation Gap

Over the last few decades the state has invested in public health, primary health care as well as secondary and tertiary health care. In the last two decades external aid has also been substantially increased to meet new challenges and widen the focus and outreach of existing programmes. A lot of efforts have been put into planning programmes and strategies, and implementation guidelines and manuals of every sort have been evolved. However at all levels and sectors of public health and primary health care, one sees a widening gap between policy intent and implementation; between what is professed and what is practiced. This **implementation gap** is a major area of concern and a major obstacle to improving the health status of our people.

The 'gap' is contributed to by multidimensional factors

- There is **lack of political will** in that health is not high on the agenda of governance. Health budgets are stagnant and often underutilised. The commitment and capacity to get plans off the ground and reach those who need to be reached is lacking.
- There is **overall lack of vision and mission**, and perspectives of health are neither comprehensive nor integrated, with increasing programmatic compartmentalisation that 'misses the forests for the trees'.
- The **planning, administration, supervision** and evaluation of the health system are **poor**, often adhoc and not always evidence based or quality conscious. This is true particularly at programme, district and subdistrict levels. The work of good people get neutralised with resulting frustration and demoralisation.
- **Leadership** of the department has lacked a problem solving orientation, team building and team motivating capacities. Lobbies and interest groups work to further their own narrow, short term interests, at the cost of the greater common good.
- **Individual agendas** based on caste or local politics have often predominated over collective good.
- The continuation of **key and critical vacancies** not being promptly filled up has also greatly contributed to a vacuum affecting implementation. In addition, frequent transfers affecting continuity and lack of younger people at district level also affects the implementation process.
- Surprisingly even in departments and programmes when many of the above factors are not at play there is a **phenomenal apathy** further affected by bureaucratic red tape and delays, or the burden of **not taking responsibility** that has contributed to this growing mismatch between plan and implementation.

Agenda for Action

- a. *There is urgent need for a comprehensively articulated State Health Policy which provides the vision / mission / goals and framework for an integrated health plan that has long term perspectives built into the system.*

- b. *There is urgent need to raise the status of health on the political agenda and to ensure that adequate financial and budgetary resources are provided to reach health for all goals, in keeping with constitutional and health policy obligations.*
- c. *There is urgent need to monitor and improve the quality of health services by increasing competence of health staff; improving logistic support and ensuring supplies; preventing duplication and compartmentalisation; strengthening monitoring of quality care and setting realistic and achievable quality of care standards.*
- d. *There is urgent need to increase accountability and transparency to prevent distortions due to extraneous influences of the market economy; of lobbies; social and political agendas; and money power.*
- e. *There is urgent need to nurture competent, committed and capable leadership at all levels to maintain, motivation, morale and ethical commitment of health personnel at all levels.*
- f. *There is an urgent need to introduce a supportive and problem solving, decentralised, supervisory system so that implementation gaps are constantly monitored and their causes addressed proactively and effectively.*

6. The Ethical Imperative

Over the years there has been a gradual decline in the commitments to ethical values at the professional level which has allowed the market forces and economic gain to distort professional values and commitments. In addition there are an increasing number of social developments and new technologies that have now been included under various legal acts / provisions to ensure that they benefit human development and not cause harm by misuse, abuse, overuse or exploitation. The increasing connivance of the medical profession in sex-selective abortion by misuse of prenatal diagnosis; and the unethical practices, recently exposed in getting donors for organ transplantations are significant examples of these trends.

Ethics and law which are complementary are crucial for the evolution of a comprehensive health policy and health care system - the former providing the spirit and inspiration, the latter the safeguard and framework. If both these are ignored the health care structure will weaken and the framework will no longer respond to the needs and aspirations of the people. The loss of the ethical imperative and the disregarding of legal framework and law determined responsibilities is another contemporary phenomenon which needs an immediate response.

Agenda for Action

- a. *The state must evolve a **charter of citizens rights and rights of patients and participants of health programmes**. These should be distributed widely and people made aware of them through formal and informal programmes. Provisions under the Right to Information Bill should be published and utilised.*
- b. ***Ethics and law** as they relate to medicine and health must be taught as an integral part of **training** of all health care professionals at all levels.*
- c. *All health professionals must be made fully aware of all the legal provisions that relate to the health care system and be conversant with the legal framework, guidelines and implications.*
- d. *Finally some form of monitoring of ethical and legal issues must be professionally determined and organised and government should support all such endeavours in this regard. Citizens groups must be part of this.*

7. Human Resources Development Neglected

There has been an overall neglect of planning and policy for human resource development and deployment in spite of the training of an army of health functionaries of all types and at all levels, through a wide network of institutions including governmental, non-governmental and private institutions.

This neglect is symbolised by

- A lack of clarity of the capacities and skills required by each member of the team;
- An inadequate estimate of the numbers required to be deployed to enhance the efficiency and effectiveness of the system;
- The absence of any clarity in policies of nurture, career development or career advancement; inability to maintain morale and motivation of the health teams;
- Little or no efforts at continuing education excepting some adhoc and sporadic efforts for the doctors;
- Lack of clarity in promotion policies; and
- The absence of social accountability,

In recent years the commercialisation and the unplanned and unregulated growth of health human power training institutions - medical, dental, nursing, pharmacy, other systems of medicine etc - has led to fall in standards, poor quality of training, and infiltration of market values into these mushrooming network of institutions.

Agenda for Action

- a. *There is need to urgently develop a state policy on health human power development that is an integrated part of a comprehensive health policy.*
- b. *There should be well planned estimates of quantum or number of personnel required currently for every category along with predictions for the next 5-10 years and the norms for recruitment and deployment including promotion.*
- c. *There should be sound programmes for nurture, career development, skill / capacity training and continuing education for all categories at all levels. Plans for retraining may also be required.*
- d. *The trend towards commercialisation and unregulated mushrooming and growth must be countered by an imaginative HHRD policy which stresses quality over quantity; is competence based; accountable and transparent and which develops in response to the needs and aspirations of the people, and not the changing demands of market forces – local, national or international.*

8. Cultural Gap and Medical Pluralism

As identified in the National Health Policy of 1982 there is a major cultural gap between the aspirations and needs of the people and the culture, personal aspirations, attitudes and work ethic of the health care system and health professionals who work in it. This is symbolised by:

- Continuing lack of awareness or sensitivity of the health teams to:
 - local health traditions and health centre;
 - herbal and folk medicine; and
 - the work of the local health practitioners and traditional birth attendants.

This is further complicated by the dominance of one system over others in our training programmes. This cultural alienation between the health system and the people becomes an obstacle to work.

- Lack of a positive attitude towards medical pluralism that affords to all systems and traditions both respect and an open-minded evidence based scientific approach, promoting dialogue, debate, sharing of ideas and resources.
- Lack of fruitful dialogue between the organised systems of medicine, inspite of state support to educational institutions and research of other systems.
- Lack of a cogent, congruent state policy that considers this rich diversity as an important resource for health planning and is keen to evolve a framework for integration.

Agenda for Action

- a. *There is urgent need to strengthen the functioning and development of Indian Systems of Medicine and Homeopathy and to build up better, working linkages, with potential for dialogue between the systems moving gradually towards a more integrated and comprehensive health policy utilising the potential of all these systems at different levels of health care, particularly primary health care and public health.*
- b. *At the community level there is urgent need to bridge this cultural gap by making health teams more sensitive to people's needs, life situations, belief systems and aspirations and building primary health care systems and the new public health systems with the full and enthusiastic involvement of the members of the community as empowered participants not passive beneficiaries. This paradigm shift in the dialogue between professional medical culture and peoples health culture is urgently required.*

9. From Exclusivism to Partnership

The health planning and monitoring efforts of the directorate focused only on government health care. This view is too limited and is particularly a matter of concern when it is common knowledge, people's experience, and now researched evidence; that apart from the government there are a large number of other groups who contribute significantly to primary health care and also substantially to secondary and tertiary health care as well. This includes local community organisations and schools; village cooperatives and women, youth and farmers clubs; voluntary agencies and NGO's; the private sector including both general practitioners and the corporate sector; and the large 'mission' sector in health care as well. This isolationist and compartmentalised attitude which ignores the contribution of all other groups / sectors must change radically if the substantial gaps in health needs and health responses have to be bridged.

Agenda for Action

- a. *There is urgent need for a comprehensive partnership policy that must enable the health secretariat and health directorate to continue to play the key leadership role in health care along with proactively designing and operationalising functional partnerships with all these sectors and groups.*
 - *These partnerships should be well planned, well regulated, well supported and committed to predetermined primary health care and public health goals.*
 - *The policy should ensure accountability and transparency of the partners and their supportive supervision, public health orientation and commitment to quality.*

- *Like the government programmes these new partnerships should also move towards community empowerment and increase the ownership and participation of the community.*

10. Ignoring the Political Economy of Health

Over the last decade neo-liberal economic policies have been promoted at both international and national levels. New international trade related agreements like WTO, TRIPS and others are affecting the economies and development strategies of many developing countries. Structural adjustment programmes and conditionalities linked to international development assistance are geared towards reducing social sector spending, removal of subsidies, greater privatisation and contracting out of services. Within the country, new economic policies that favour globalisation, liberalisation and privatisation are also affecting the marginalised sections of society inequitously with widening disparities between classes, between districts and within regions. All these new economic trends adversely affect various aspects of health care delivery systems, with reduction or stagnation of public sector and public health budgets; rise in prices of drugs and diagnostics; contraction of the public sector; the potential impact of WTO and change in patent laws on pharmaceuticals and health care options; increasing corruption and scams; and the impact of all these factors on public health and access by poor to health services and medical care.

An important concern is that there seemed to be no group at the state level which was monitoring or studying the political, economic, social, institutional dimensions of these new trends and their impact on health. This is an urgent imperative.

Agenda for Action

- There is urgent need for a multidisciplinary, intersectoral resource group to study the impact of all these new economic trends on the health of the poor and the public health and primary health care goals of the state. This group should not only monitor these trends but also suggest counter strategies and policy responses as well.*

11. Research

Finally one of our greatest concerns was that 'research' of any type – basic or applied; biomedical or socio-epidemiological; field research or action research and operational research was totally neglected in the health sector. In spite of large numbers of ongoing programmes including over ten externally aided projects the focus, the commitment, the outlay, or the importance given to research was surprisingly poor. Research seems to have become a very neglected, under funded activity reflected in the overall poor quality, efficiency or effectivity of health care programmes and initiatives. A radical and renewed commitment is urgently required, since it is through 'research' and objective enquiry that the strengths and weaknesses of our existing system can be identified, and only through research can evidence based solutions emerge.

Agenda for Action

- There is urgent need for a **multidisciplinary research** programme to be initiated so that the study, monitoring, evaluation and problem solving approaches to health care development can be greatly strengthened. This programme should be very **strong on behavioural and the social sciences** and not just be biomedically oriented.*
- Research by the Rajiv Gandhi University, the medical and other professional colleges; the department of social work, sociology, psychology of the university and NGO's and health policy*

resource groups and consumer groups and civic society should be encouraged, and supported. Greater linkages between the health care system and these research projects would help to generate more evidence-based support to change and improve health services.

12. Countering the Growing Apathy in the System

While all the above factors seem more tangible with definitive agendas for action, the greatest area of concern is a growing apathy and cynicism in the health care system. Many enthusiastic members of the health team at different levels have become more passive and even cynical, due to unfortunate experiences of corruption, political interference, lack of accountability and transparency; routinisation of effort and loss of meaning and a growing cynicism in the larger society. This seems to have reached very substantial proportions. The task force process because of its interactive discussions and its wide range of dialogue has helped to address this apathy and cynicism (which had developed over years) and may have created a short term breakthrough, by providing a large number of people in the system with

- a stake in a change of the system;
- a hope in a more concerted effort to tackle problems;
- a vision for a more people responsive health care.

However unless this inspirational process is maintained and the process of dialogue and involvement enhanced and sustained, all the cross cutting concerns may never get adequately addressed.

Agenda for Action

- a. *Therefore the most important agenda for action is the nurture and sustained support to the top health sector leadership. Vision, capacity and enthusiasm must over ride the seniority factor or the caste politics linkages.*
- b. *There is need to nurture visionary leadership at other levels that can improve the morale and motivation of the health teams and move them from cynicism and apathy, to enthusiastic team work, so as to reach primary health care and public health goals and to meet the aspirations of the people.*

This is both a challenge and an urgent imperative.

Source: "Karnataka towards Equity, Quality and Integrity in Health – Focus on PHC and Public Health". Published by Task Force on Health and Family Welfare, Government of Karnataka. 2001

IMPLEMENTATION OF THE SHORT TERM RECOMMENDATIONS

*"I never did anything worth doing by accident,
nor did any of my inventions come by accident,
they came by hard work."*

- Thomas.A.Edison

The Task Force on Health and Family Welfare, Government of Karnataka, had given in April 2000, an Interim Report, with short term recommendations. These were expected to be implemented within 6 months. The Task Force had also been given the responsibility to monitor implementation. The terms of reference included the following:

"The Task Force shall not only make recommendations with regard to the above issues but is also expected to monitor the impact of the recommendations especially in the initial stages of implementation".

The Task Force had been monitoring the implementation of the short term recommendations through

- Periodical meetings and discussions with the Principal Secretary, Health, the Commissioner for Health, the Secretary, Medical Education, the Directors and other Officers in the Directorates of Health and Family Welfare, Medical Education, Indian Systems of Medicine and Homoeopathy and other allied areas, and the Project Directors of Karnataka Health Systems Development Project, IPP VIII, IPP IX and other concerned officers;
- Visits to Government health care institutions, primary, secondary and tertiary and discussions with the officers and others;
- Discussions with members of the public and organisations and associations concerned with the improvement of the people of the State.

The Task Force is very happy with the responses of the officers of the departments, who have given their reports on the implementation of the short term recommendations, either verbally or in writing. The detailed report on the action taken is given in the supplement to this Report, but a few of the more important ones are given here:

Sl.No.	Recommendations	Action Taken
	1. PRIMARY HEALTH CARE	
1.1	RURAL HEALTH CARE: All vacancies of Doctors, Laboratory Technicians and ANMs at PHCs and Sub Centres must be filled up immediately	<p>Currently there are only 141 vacancies of doctors in PHCs, after filling up most of the vacancies through KHSDP. 403 doctors have reported for duty out of the 568 appointments made. Directions have been given by Government to all DCs to fill up these vacancies on contract basis. Govt. has also notified the recruitment of 550 more GDMOs.</p> <p>The DCs have appointed 380 Lab. Technicians on contract basis out of 946 posts sanctioned by the Govt.</p> <p>With regard to ANMs, out of the total sanctioned 10255 posts, 514 posts are vacant. 124 ANMs were working on OOD basis in various institutions under the control of Indian Systems of Medicine, Bangalore. The services of these candidates are withdrawn and are posted in vacant places of this dept. 550 vacancies will be filled up shortly after the trained candidates are made available from the training institutes of the dept. There is also a proposal to fill up these vacancies by taking staff nurses as ANMs on contract basis.</p> <p>Applications have been called for the following: 550 Medical Officers, 80 Dental Surgeons. Government has also recently created 100 new posts of leave-cum-reserve Doctors.</p>
1.2	All key staff, including Doctors, Staff Nurses / ANMs and other essential staff, attached to the Primary Health Centres must stay in the quarters. Where repairs are necessary they should be carried out immediately; where there are no quarters, action may be taken to construct them; if quarters are not available, houses may be taken on rent;	<p>CEOs / DHOs have been asked to initiate disciplinary action on Doctors and the staff who are not staying in the head quarters.</p> <p>An amount of Rs.200-00 lakhs is provided for 2001-02 for construction of Medical Officers Quarters. Wherever Govt. accommodation is not available, to meet the rent and other expenditure, doctors will now be entitled to Rs.1000 per month as special allowance.</p>
1.3	The allotment for Essential Medicines (including Life Saving Medicines) must be increased by at least Rs.25,000/- per annum per PHC. All Essential drugs must	G.O has been issued increasing the allotment as recommended. Action has been taken to supply drugs after preparing the list of essential drugs required by PHCs.

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	be available at the PHC at all times.	
1.4	PHC must have a Telephone	DHOs have been addressed on 17/2/2001 to make arrangements for provision of telephones. Already 555 PHCs have telephone facilities and several Zilla Panchayats have taken action to install telephones.
1.5.	Atleast 1000PHCs in the State must be made fully functional satisfying the above criteria, within the next 6 months	Lab equipment worth Rs 50 lakhs (Rs.5000/- per Primary Health Centre) was finalised and the procees of supplying it is being completed. Rs.200.00lakhs worth of supplies has been proposed through KAPL. In addition, through IPP-IX, essential furniture and equipment is also being supplied to fill the gaps.
1.6	REFERRAL SERVICES - Secondary and Tertiary Health Care: Complete the Secondary Care Institutions in progress under KHSDP (100 Secondary Care Hospitals) in the next Six months and make them fully functional with adequate Human power, equipments and accessories. The OPEC Hospital in Raichur must be made functional as early as possible. Work out effective linkages of Primary Health Care Institutions with the referral hospitals.	KHSDP has completed 105 Secondary Care hospitals in all respects. Action has been initiated to make them fully functional. A final decision on the management lease to a non-Profit organisation for the OPEC Raichur Hospital is expected shortly. KHSDP has also initiated steps for establishing an effective referral system from PHCs to Secondary Level Hospitals.
1.7	EMERGENCY HEALTH SERVICES Improve the capability of the Health Care Personnel at PHC to attend to emergencies. The Emergency services should also cater to all emergencies, including Obstetric and Gynaecological cases, poisoning cases and Dog and Snake bites. Polyvalent anti-Snake Venom Serum must be made available at all PHCs at all times as a life saving measures.	The Medical personnel at the Primary Health Centre are capable of treating Dog bite and Snake bite cases. Adequate stocks of ARV and ASV are being supplied to Primary Health Centre's through District Health & Family Welfare Officer's.
1.8	Well-equipped Ambulance Vans with well-trained paramedics must be positioned on the National and State Highways to attend to	Karnataka Health Systems Development Project is addressing this by establishing 40 Trauma Care Centres. Sanjay Gandhi Accident Hospital and

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	accidents. Network the Trauma Centres with the Taluka / District Hospital; with adequate Communication facilities. Sanjay Gandhi Accident Hospital and Research Institute and NIMHANS to be the nodal Centres.	Research Institute and NIMHANS are referred as State Level Referral Centres for Trauma Care.
1.9	LABORATORY SERVICES All laboratories must be staffed with trained technical persons and equipped with the necessary instruments, accessories and reagents. Fresh appointees must be given orientation training before posting and existing staff should be given refresher training.	880 laboratory Technicians have been recruited on contract basis and all these laboratories are equipped with necessary articles and laboratory wares. Information regarding number of Lab Technicians who are working and newly recruited in all PHCs has been collected. Training Programme has been chalked out with syllabus, Trainers training for DSO's and Senior Laboratory Technicians have been given in 2 batches of 3 days each in the months of August and September 2000 who in turn are imparting training to both the existing and newly recruited lab technicians in all districts of the State.
1.10	The PHC laboratories must provide prompt and efficient service for the diagnosis of TB, malaria, leprosy and RTI/UTI; other routine investigations must be available.	At present leprosy diagnosis is a vertical programme and leprosy slide examination is not done at Primary Health Centre. However, PHC has taken up training of lab technicians, and they are given training in leprosy slide examination by the leprosy officer. After integration of NLEP, the lab technician will do the leprosy slide Examination at PHC.
1.11	Rs. 30,000/- per PHC to be initially earmarked for the purchase of Microscopes (about Rs. 15,000/-), glassware, equipment, other accessories and reagents.	Rs. 200.00 Lakhs for purchase of Chemicals Glassware's equipments, Microscopes for 1000 PHCs has been provided in the supplementary budget for 2001-02 The Department is contemplating to procure the chemicals, Glasswares, Microscopes and other equipments for use in about 1000 PHCs in the State from M/S. Karnataka Antibiotics and Pharmaceuticals Ltd. Bangalore

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1.12	BLOOD BANKING AND TRANSFUSION SERVICES The eight districts in the State which do not have a Blood bank to have atleast one blood bank each.	The Blood Banks as per the statutory needs have been sanctioned to all the District and Major Hospitals in the state. Blood Bank in U.K. district has started. In Kodagu, the Blood Bank Officer is undergoing training and functioning of the Bank will commence soon. In the remaining districts, Blood Banks will be started after the completion of the buildings under Karnataka Health Systems Development Project.
	2. PUBLIC HEALTH	
2.1	Human Resources for Public Health A short two week course on Public Health principles and practice for Taluka and District Health Officers at the State Institute for Health and Family Welfare. Short in-service orientation courses on public health principles and programmes for PHC Medical Officers.	The programme has been initiated. Training has been completed for two batches.
2.2	Structural Issues in the Public Health System A review of the Externally Aided Projects to be initiated to facilitate their absorption into the Health System. Sustainability and consolidating the gains/achievements to be the primary objective.	KHSDP has already commissioned a study. Sustainability Plans are being developed both for KHSDP as well as IPP-VIII and IPP-IX.
2.3	NUTRITION Define and establish the items of coordination between the Health Sector and ICDS. These must include: (a) mechanism to detect, take corrective steps and monitor children with mild to moderate undernutrition. (b) coordination in detecting and treating infectious diseases in children, especially diarrhoea, skin and ear infections with appropriate care.	At present Monthly Monitoring reports are collected from CDPOs through medical forms. On ICDS Projects, the reports are received at the Directorate of Health & Family Welfare Services and consolidated report on items like Nutritional status of children, vital events, number of ANC's visited by Medical officers is prepared and feedback is sent to DJD/DHFWOs every month. Regular Joint review of the programme is done at the Sectoral level, block level & District level every month at the Divisional level, where officers from the both the departments of state level also participate.

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		In some projects the services are well established and children are being adopted for providing treatment for different diseases.
2.4	Systematic promotion of kitchen gardens supported by seed/seedling supply. Drumstick, Chakramuni (<i>Chikermane</i>), Amaranthus, Papaya, local beans, are some examples.	Women and Child Development and Health & Family Welfare Departments have initiated discussion with Horticulture Department.
2.5	Upgrade the post of Deputy Director of Nutrition (Dept. of Health) to Joint Director and expand the role and job description of the JD to fulfill the responsibilities and implement and monitor Nutrition programmes.	The post has been upgraded and job description of the Joint Director includes monitoring of all nutrition programmes.
2.6	WATER SUPPLY AND SANITATION Ensure regular water quality testing facilities in all the districts. The monitoring to be facilitated and coordinated by the District Surveillance Units. The PHC and Taluka Medical Officer should visit all sources of Drinking Water periodically.	District Surveillance Units are functioning in all districts. Analysis of drinking water is undertaken. Samples are received from the peripheral institutions also. Instructions to districts to visit all sources of drinking water have been issued.
2.7	WASTE MANAGEMENT Ensure proper segregation of Waste and total waste management at all health care institutions.	Action has been taken under the KHSDP Project in all Secondary Level and district teaching hospitals.
2.8	Initiate orientation and training of Health Care Personnel for proper waste management practices including practice of Universal Precautions.	Action has been taken for training and workshops on waste management under KHSDP.
2.9	The government should support initiatives for common waste management treatment facilities.	Action has been taken in Hospet as a Pilot Project. In Bangalore city dialogue has been held with BMP.
2.10	COMMUNICABLE DISEASES Sputum (TB) and blood smear (Malaria) results on every sample to be reported within 24 hours of specimen collection; 5% random sample check by supervisory staff. Induction	Results of Sputum examination are given on the same day. Random check is done by supervisory staff (100% of positive smears and 10% of negative smears). Training is provided.

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	training and refresher course of Laboratory technicians by rotation.	<p>As per guidelines of Govt. of India (NAMP) the time lag between collection of blood smears and administration of Radical Treatment should not exceed 10 days. There are 1237 Jr. Laboratory technicians in order to make the peripheral laboratories functional. Hence, quick examination of blood smears, detection of positives for Radical Treatment has been ensured. As per the guidelines of NAMP, Central Malaria Lab is crosschecking 3% and regional office is checking 1.5% of the slides.</p> <p>For induction training to the newly recruited laboratory technicians in the State, KHS DP organized a 6-day trainer's training programme for the trainers of the districts during August 2000 and they in turn are imparting training for 21 days in their respective districts. The Regional Director, Government of India, Bangalore is conducting the refresher course training under Enhanced Malaria Control Programme.</p> <p>The State level and district level officers are being trained every year by the Directorate of NAMP, Delhi and the course is for 1 month. Nominations are being sent from this Directorate every year, as and when called for.</p>
2.11	One Day Workshop each for Tuberculosis and Malaria to help the rational implementation and vitalise the TB control and Anti-malaria programmes in the state. The participants to include State and District Officers and all Professors of Medicine of all Medical Colleges in the State and representatives of all relevant Professional Associations.	<p>One-day workshop was held up on 18.8.2000 at NTI for teachers of Medical Colleges, doctors working in major hospitals and sanatoria. 52 doctors participated.</p> <p>Sensitisation programme for districts arranged on 25-9-2000 to 26-9-2000 for RNTC districts. Another workshop is proposed with participation of Task Force Members.</p>
2.12	<p>NON COMMUNICABLE DISEASES</p> <p>Diabetes Mellitus</p> <p>All PHCs to have facilities to detect and manage / refer patients with Diabetes.</p>	<p>On 15-9-2000 a meeting of District Health and Family Welfare Officers of Five districts along with leading Diabetologists was held and instructions to conduct training to medical officers, paramedical workers, social workers, and public</p>

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		was issued. Given Budget of Rs.5/- lakhs is allocated to five districts i.e., one lakh to each district (Dakshina Kannada, Hassan, Chitradurga, Bellary and Belgaum.) it was decided that in the above districts where medical colleges are available, the programmes for training will be taken up. Printed Books have been supplied to the above districts.
2.13	Mental Health and Epilepsy The Community based Mental Health Programme in Bellary District should be strengthened. Train Primary Care physicians and paramedical workers in the diagnosis and management of epilepsy. Make available the needed drugs (phenobarbitone and phenytoin) without break, through the Primary Health Centres.	Under the Mental Health and Epilepsy Programme three types of clinics are conducted. <ol style="list-style-type: none"> 1. District Mental Health Programme in districts of Kolar, Bijapur, Mysore, Chitradurga, Bellary and Gulbarga. 2. District Mental Health Clinics are conducted in Bijapur, Karwar, Mandya, Chitradurga, Chickmagalur, Kolar and Raichur. 3. With the assistance of NIMHANS, clinics are conducted at Maddur and Mudhugiri, Anekal, Jigani, Gowribidanur. With the help of District Health & FW Officers, doctors are being trained to treat them at village level. Phenobarbitone and Phenytoin are already supplied.
2.14	Improve the facilities and conditions in the Karnataka Institute of Mental Health, Dharwad which should continue as the major speciality institute with autonomy in governance.	NIMHANS proposal was examined and the Institute of Mental Health, Dharwad has been provided with improved facilities.
2.15	Cancer Control Downstaging of Cancer Cervix programme to be initiated on priority.	Project for 200 PHCs has been initiated along with St. John's Medical College and NGDS.
2.16	Oral Health: All Taluka hospitals to have qualified dental surgeons.	As per Government order No. Health and Family Welfare: 2:HSD:2000 dated 26-08-2000, 113 Dental Health Officers were appointed and vacancies filled up in various Taluk Hospitals and other hospitals. All the Taluk Hospitals have

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		dentists excluding 25 Taluk Hospitals. These vacancies can be filled up only after fresh recruitment. Applications have been called for 80 more dental surgeons.
	3. MATERNAL AND CHILD HEALTH	
3.1	Increasing the skills of ANMs in the CNA methodology. Revision of the existing training syllabus to incorporate enhanced technical and communication skills. Sensitisation regarding the importance of the timing, spacing and number of births, and exclusive breast feeding for the first 6 months.	ANMs are being trained in assessing community needs and calculating the subcentres requirements. Subcentre action plan is being prepared by the concerned ANM under the supervision of LHV/BHE. Continuing Education to ANMs is being given. Mothers meetings are being conducted by involving MSS members, trained Dais, NGOs, stressing on the importance of spacing, birth timing and importance of exclusive breast feeding for first six months. For 2000 - 01, action was taken to prepare the plan and RCH Officers were given training. Two workshops have been conducted for SOS and DNOs.
3.2	The role of Dais in safe deliveries should be supported and training enhanced. Disposable Delivery Kits of good quality cost effective components should be provided.	Out of the 31540 Dais in the state, 25940 Dais are trained in conducting safe deliveries. Remaining 5600 Dais are to be trained. Proposal and action plan to train 2600 dais of 'C' category districts during the year 2000-2001 is under implementation. The remaining 2000 dais in category B districts will be trained in 2001-02. The procurement of SSDK (Good quality cost effective) is under progress. Orders have been issued.
3.3	Where services of ANM are not available, the AWW to be trained to undertake the specified activities till a regular ANM is posted.	Action taken in 'C' category districts including sub project, Bellary. Government Orders have been issued for payment of additional incentive in this regard and the order has been implemented.
3.4	Ensure 100% registration in the first trimester, proper antenatal, natal, and postnatal care with involvement of Private Sector.	Attempts are being made to ensure 100% registration in the first trimester and also involvement of private sector has been initiated in Bellary district utilising the services of FOGSI members.

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3.5	Ensure uninterrupted supply of IFA at all times at all Health Care Institutions.	Attempts are made to ensure uninterrupted supply of IFA tablets.
3.6	Ensure 24-hour delivery services at FRUs with involvement of Private Sector.	Action taken to ensure 24 hour delivery services at FRUs. Where the Obstetricians and Gynecologist are not available, utilisation of services of OBG specialist from private sector has been proposed and approved.
3.7	A Pilot Project has been taken up in the district of Bellary with proactive involvement of FOGSI. The identified FOGSI members would undertake Antenatal Clinics for those at high risk within a radius of 10 Kms from the FRUs, complement the available services in Public Hospitals and also involve in Training Programmes.	Clinics are being conducted by FOGSI members.
	4. POPULATION STABILISATION	
4.1	A Population Policy as part of the comprehensive Health Policy will be drafted for wider discussions for eliciting public and professional opinion.	Decisions of Population and Development Commission is under consideration and will be examined further on receiving the Draft Health Policy from the Task Force on Health.
4.2	Commence a strong IEC programme regarding the health hazards and social ills of early marriages, the need to raise the age at marriage and advantages of postponing the second child.	Regular IEC programme is under implementation with IPP-IX and Family Welfare Fund.
	5. WOMEN AND HEALTH	
5.1	Sensitise all Health Care Personnel on issues relating to gender inequalities.	Specific programmes under formulation to promote gender equity. The programme is integrated into general health services to improve effectiveness.
5.2	Educate and promote personal hygiene especially during menstrual period by the distribution of subsidised menstrual pads/cloth.	Government Order is issued. Supply of kits is under process.

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5.3	Services of Lady Medical Officer to be available at all Primary Health Centres.	30% of posts are reserved for LMOs. Ongoing efforts are made to post more number of LMOs to PHCs.
5.4	Improve diagnostic, medical and counseling services for STI & HIV/AIDS for women as well as the sexual partner.	FHA camps are being held twice a year for providing RTI / STI treatments and counseling with special focus on women. The next FHAC will be held between 16 th to 30 th April 2001.
	6. PERSONS WITH DISABILITIES	
6.1	Utilise Media to create awareness and training of parents and other care-givers on specific disabilities.	A comprehensive media plan is under formulation
	7. TRIBAL HEALTH	
7.1	Strengthen the Mobile Health Units and the PHCs in the Tribal areas and make them all functional.	It is proposed to activate the existing ten mobile units in tribal areas out of IPP-IX funds. Proposal has been submitted to the govt. for infrastructure and full fledged staff for all Primary Health Centres sanctioned in tribal areas.
7.2	Strengthening of the Tribal ANM project. The current batch of 27 needs to be posted on priority and a fresh batch of training to be initiated.	This is being done.
	8. SCHOOL HEALTH	
8.1	Initiate action for greater coverage of all students in all the schools in the state with health (including Dental) checkups and health education. Train students in First Aid.	Action Plan is already prepared and made available to the all District Health & Family Welfare Officers for implementation. It is being implemented now. The students have been examined by Senior Health Assistant with the help of Junior Health Assistant. The programme is being reviewed every month at the district and at the Directorate. Dialogue has taken place with the education department to strengthen the programme further.

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	9. HEALTH HUMAN RESOURCES DEVELOPMENT	
9.1	Redeploy teaching and non-teaching staff according to the needs.	133 lecturers have been recruited.
9.2	Increase the intake for the training of Auxiliary Nurse Midwives (ANMs) Encourage NGOs with the capacity for training to take up the training of ANMs.	Attempt will be made to increase the capacity of ANM training students from 30 to 40 per batch. Proposals for 7 new ANM training centres in new districts is under examination.
	10. ADMINISTRATION	
10.1	The process of regularisation of the contract doctors to be commenced.	Proposal for regularisation of services of 342 Doctors on Contract Basis, out of 400 Doctors who have completed 3 years of service, has been submitted to Govt. The balance of 58 posts to be selected under K.H.S.D.P. 592 Contract Doctors will be considered for regularisation after their completion of 3 years of service.
10.2	A transfer Policy to be evolved on the basis of well-defined criteria, and implemented. The criteria could include a) a three to five year limitation in a particular post or place, b)a compulsory posting in the rural post (ensuring that positions in the less favoured areas such as Northern Karnataka are particularly covered) , c)postings to the urban areas being available as seniority and personal responsibilities increase, d)transfers of primary health center(including subcentre) staff should be preferably be within the district. In making transfers the mismatch between the qualifications of the officer and those required for the post should be corrected. The principles adopted by the Education department would provide useful guidelines	During General Transfers 2000-01, as far as possible doctors are posted according to their speciality. There is a proposal to reduce the rural services from 6 years to 3 years for Post-Graduates, to facilitate the postings to Taluks and District Level Hospitals.
10.3	The selection of In-service Doctors for post-graduate courses to be based on the needs of the Department for quality health care.	This is being done.

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10.4	The practice of postings of officers OOD should be kept to the bare essential. This would ensure that postings based on individual preferences or to avoid transfers are minimised.	The practice of posting of the Officers on OOD is kept where there is urgency and utmost necessity and in order to keep the programme functioning continuously. Directions will be issued to Chief Executive officers to obtain concurrence of Govt. whenever postings of officers on OOD basis are required to be effected.
10.5	The role and responsibility of the Commissioner, Health and Family Welfare may be defined (as in the Annexure) so as to enable him to function efficiently.	Government Order issued on the lines recommended.
	11. PLANNING	
11.1	A suitable structure for the Planning Unit in the Directorate, and descriptions of its functions to be prepared to address the issues of long time, 5 year and annual plans, the Physical, Financial and Human resources Plan.	Manpower Planning Study initiated
	12. FINANCING	
12.1	Additional resources to be provided during 2000 – 2001 to carry out the reforms suggested.	Additional funds were made available to an extent of Rs.10 crores during 2000 – 01.
12.2	Monitoring of expenditure, especially plan programmes to ensure adequate utilisation and results must be done.	The monitoring system is in place in the Directorate as well as at the state level.
	13. HEALTH MANAGEMENT INFORMATION SYSTEM	
13.1	An integrated Geographical Information System based HMIS to be initiated and implemented.	Action has been initiated. Personnel and disease reporting modules are finalised. Work on Geographical Information System has also been initiated.
13.2	All the District Health Offices should be computerised for efficient management and control of Health System in the district.	Action is being taken to train staff through IPP-IX and KHSDP. Computers are also being supplied.

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13.3	The formats / registers needed at various levels to be updated, printed and supplied in adequate quantities and on-time.	Action has been taken to print adequate reporting formats.
13.4	Annual reports and monthly updated programme performance to be placed on website of the Directorate.	The Annual Report of the year 2000-01 will be placed on KHSDP web site.
	14. MEDICINES PROCUREMENT AND SUPPLY	
14.1	The Rate Contract System a) to be based on the exhaustive list incorporating the features of the WHO and the National Essential drug list; b) if there is no bidder for any essential drug, suitable alternative arrangement to be delineated for purchases to be made.	RC List for 2001- 2003 is prepared. Tender process has been initiated.
14.2	The RC should specify the total requirement of the drugs for the entire State including that of ZPs and include all sources and not just 40% of the GMS quota.	To get the yearly requirement of drugs a circular has been sent on 19.7.2000 to all the institutions.
14.3	The ZP or any other drugs procurement agency for Government Health Care Institutions in Karnataka should restrict to the drugs listed in the RC. Exceptions to be made with not greater than 10% of the allocated norm.	A Circular has been initiated to all institutions to implement the same.
	15. LAW AND ETHICS	
15.1	The legislation introduced in the Legislative Council to regulate the functioning of Health Care Institutions should be sent to a Select Committee to elicit views from all concerned (stake-holders, professionals and public).	Original bill had several lacunae and is being withdrawn. The revised bill suggested by the Task Force is under examination.
	16. INDIAN SYSTEMS OF MEDICINE AND HOMOEOPATHY	
16.1	Plan/initiate planning to have ISM&H wings in the existing District / Taluka hospitals.	Pilot initiative undertaken in Mandya district hospital. Implementation of the same at the other district hospital is being considered.

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16.2	The drug licensing authority should ensure the printing of the date of manufacture and date of expiry of drugs on the containers.	This is being followed and monitored strictly.
16.3	The budget allocation per dispensary should be increased to Rs. 36,000/- per annum.	The budget to PHCs has been enhanced and the drug supply increased.
16.4	The stipend for the Interns and Postgraduates to be enhanced.	The stipend has been enhanced.
16.5	Steps to be taken to conduct Entrance Tests for selection to Postgraduate courses.	The system has been streamlined and the work has been entrusted to Rajiv Gandhi University of Health Sciences.
	17. PANCHAYAT RAJ AND EMPOWERMENT OF PEOPLE	
17.1	The Gram Panchayat should appoint a woman health functionary at Villages, where there is no ANM or Anganwadi worker for the management of Health, Nutrition, Drinking Water and Sanitation, Population. This could be initiated atleast in a few districts where Human Development Index is low.	Anganwadi workers are being asked to perform this role at the village level, where there is no ANM posted, in category 'C' districts.
	18. STRENGTHENING PARTNERSHIPS	
18.1	Involve organisations of doctors in IEC activities and national programmes.	IMA and FOGSI are being extensively involved in all the national programmes
18.2	Provide drugs and vaccines in the national programmes to the private practitioner for the benefit of the economically poor.	This has been accepted for the TB programme.
18.3	Tertiary hospitals in Private sectors to also provide training programmes for the government doctors.	Tertiary hospitals are being involved in the training of doctors.

The Task Force on Health and Family Welfare wishes to thank all the persons concerned for the action taken. It is hoped that the Final report will also be dealt with the same spirit and action will be taken without any delay, so that people's health, and especially the health of the disadvantaged, becomes a reality.

1. EQUITY IN HEALTH CARE

Equity is fairness. The principle of equity in health is rooted in the recognition of health as a human right. Equity requires the elimination of unnecessary, unjust and avoidable differences in the opportunity to enjoy health and having similar opportunity to meet the needs in case of being ill or incapacitated. There has to be access to and utilisation of services according to the needs. The equity issue has been uppermost in countries that have been interested in ensuring reduction in inequities in health, e.g., U.K. After the Black report 1980 (Douglas Black, : Working group on Inequalities in Health, set up in 1977) efforts had been made to reduce the inequities. Due to political changes, dilution occurred in these efforts. Recently a new committee was set up, chaired by Donald Acheson (Independent inquiry into inequalities in health). The terms of reference were:

1. Summarise the evidence of inequalities of health and the expectation of life and identify trends.
2. Identify priority areas for future policy development to reduce health inequalities.

Definite links had been established between health and wealth (income), and between health and social class. Recently (2001), the High Power Committee for Redressal of Regional Imbalances in Karnataka, chaired by Prof. D.M. Nanjundappa, has submitted its first phase of recommendations. This is based on general backwardness and imbalances.

It is necessary that the State sets up a committee to go into the broad nature of inequalities in health and their determinants, as also what can be done, especially what can be done by the health system.

Equity in health requires that

- Health care services should be accessible to all the people equally; it should not be less accessible to the disadvantaged populations in the State than the services to the better off areas or regions (districts, talukas, municipalities or villages) or on the basis of gender or socio-economic or other considerations (a pro-poor and pro-disadvantaged people policy);
- Health care services to the disadvantaged people are not of poorer quality (primary health care and referral services);
- Allocation and application of resources (human, financial and material) are in relation to the health needs of the people (re-distributive health spending based on people's needs);
- Positive efforts are made to reach those people in the State whose health is worse;
- Emphasis has to be on public health whose benefits are shared more equally by all sections of the society.

Inequities in access to health care may be due to supply and demand factors: geographical (regional) distribution, availability of health care personnel, range and quality of primary care facilities, levels of training, timing and organisation of services; distance to the first contact of care, availability and affordability of communication and

transport. Added to them is people's awareness of the services available locally and on referral as also the social and economic influences.

While discussing health status (indicators of health), we take averages for the State or district. It is necessary to have disaggregated data based on gender, age, socioeconomic status, geographical location, and other factors. There are various other criteria: widows, widowers, elderly men and women, persons with disability and orphaned children. These categories of persons need greater care. Having the same care will not ensure equity.]

How to measure equity?

1. Access to health care services: physical, based on distance and time; number of first contact health services providers, referral services.
2. Utilisation of health care services. Do individuals with the same type of health problem get similar treatment, whatever be their socio-economic status?
3. Health outcomes across different groups.
4. Public expenditure on health.
5. Mortality and morbidity indices (infant mortality rate, under-5 mortality rate, maternal mortality rate, life expectancy at birth, etc) of different socio-economic groups.
6. Chance of becoming ill at any given time.
7. Incidence/prevalence of physical and mental disabilities.

1.1. REGIONAL DISPARITIES

Some of the disparities in health and development in Karnataka are a part of the historical legacy, with the formation of the State by the merger of Kannada speaking regions of Mysore, parts of Bombay, parts of Hyderabad, parts of Madras and Coorg. The princely State of Mysore had been in the forefront in matters of basic health services and other determinants of health (and development in general), while the other parts lagged behind. This and other factors have led to some of the districts having health indices that are behind others, leading to disparities and therefore, inequities.

Disparities between districts

A large number of indices can be used to measure health or lack of it.

(i) Life expectancy at birth

The life expectancy at birth was more than 68 in Dakshina Kannada and Kodagu, while it was less than 61 in Bellary and Tumkur.

Four districts with high life expectancy (1991)

1.	Dakshina Kannada	:	68.82
2.	Kodagu	:	68.04
3.	Uttara Kannada	:	66.96
4.	Bangalore Rural	:	66.69

Four districts with low life expectancy (1991)

1.	Bellary	:	60.32
2.	Tumkur	:	60.64
3.	Chitradurga	:	61.92
4.	Shimoga	:	62.09

(ii) Infant Mortality Rate

Infant Mortality Rate is one of the best indices to find out the health status. There are wide variations between the districts. It is a low 29 in Dakshina Kannada and a high of 79 in Bellary (Registrar General of India, 1991).

(iii) Crude Birth Rates, 1995-98.

(RCH Survey, 1998-99, Government of India)

Four districts with low crude birth rates (less than 20)

1.	Bangalore Rural	:	17.1
2.	Hassan	:	17.5
3.	Uttara Kannada	:	19.5
4.	Shimoga	:	19.6

Four districts with high Crude Birth Rates (Source same as above).

1.	Kodagu	:	34.2
2.	Bidar	:	31.6
3.	Gulbarga	:	30.1
4.	Raichur	:	29.1

If we look at the Crude Death Rates, again we find differences between the different districts.

Dakshina Kannada	:	7	Gulbarga	:	10.5
Shimoga	:	7	Bidar	:	10.5

Human Development Index and Literacy Rate:

There is a very good relationship between the human development index, which includes health indices and literacy, which is an important determinant of health.

i) HDI Ranking and Literacy Rate**Top 4 districts:**

Rank	District	HDI	Rank	District	Literacy Rate
1.	Kodagu	0.630	1.	Dakshina Kannada	76.7
2.	Bangalore Urban	0.601	2.	Bangalore Urban	76.3
3.	Dakshina Kannada	0.592	3.	Udupi	74.6
4.	Uttara Kannada	0.533	4.	Kodagu	68.3

Udupi is a new district.

Bottom 4 districts:

Rank	District	HDI	Rank	District	Literacy Rate
1.	Raichur	0.399	1.	Raichur	34.3
2.	Gulbarga	0.412	2.	Gulbarga	34.3
3.	Bidar	0.419	3.	Koppal	38.2
4.	Bellary	0.429	4.	Chamarajanagar	38.2

Koppal and Chamarajanagar are new districts.

- (ii) **Health Index**, which is a composite index, also shows wide variation between the districts. Bellary has an index of 0.589, whereas Dakshina Kannada has an index of 0.730 (Human Development in Karnataka, 1999).

Rural : Urban Differences

There are wide differences between the rural and urban health indices.

- (i) Infant Mortality Rate, 1997

Urban : 24

Rural : 63

- (ii) Crude Birth Rate, 1998

Urban : 19.3

Rural : 23.1

- (iii) Crude Death Rate, 1998

Urban : 6.9

Rural : 8.6

Health Care Services

Many factors contribute to health care services: quality and number of health personnel (doctor: population ratio, nurse: population ratio), health care institutions, bed: population ratio and others.

Bed: Population ratio

There is wide variation in the bed: population ratio in the different districts. While it is one bed per 395 people in Kodagu, it is only one bed per 2330 population (not counting the new superspeciality hospital) in Raichur. It is necessary to ensure at least one bed per 1000 population, of which two-thirds (66.7%) must be government-owned, and they must be equally distributed.

Health Personnel

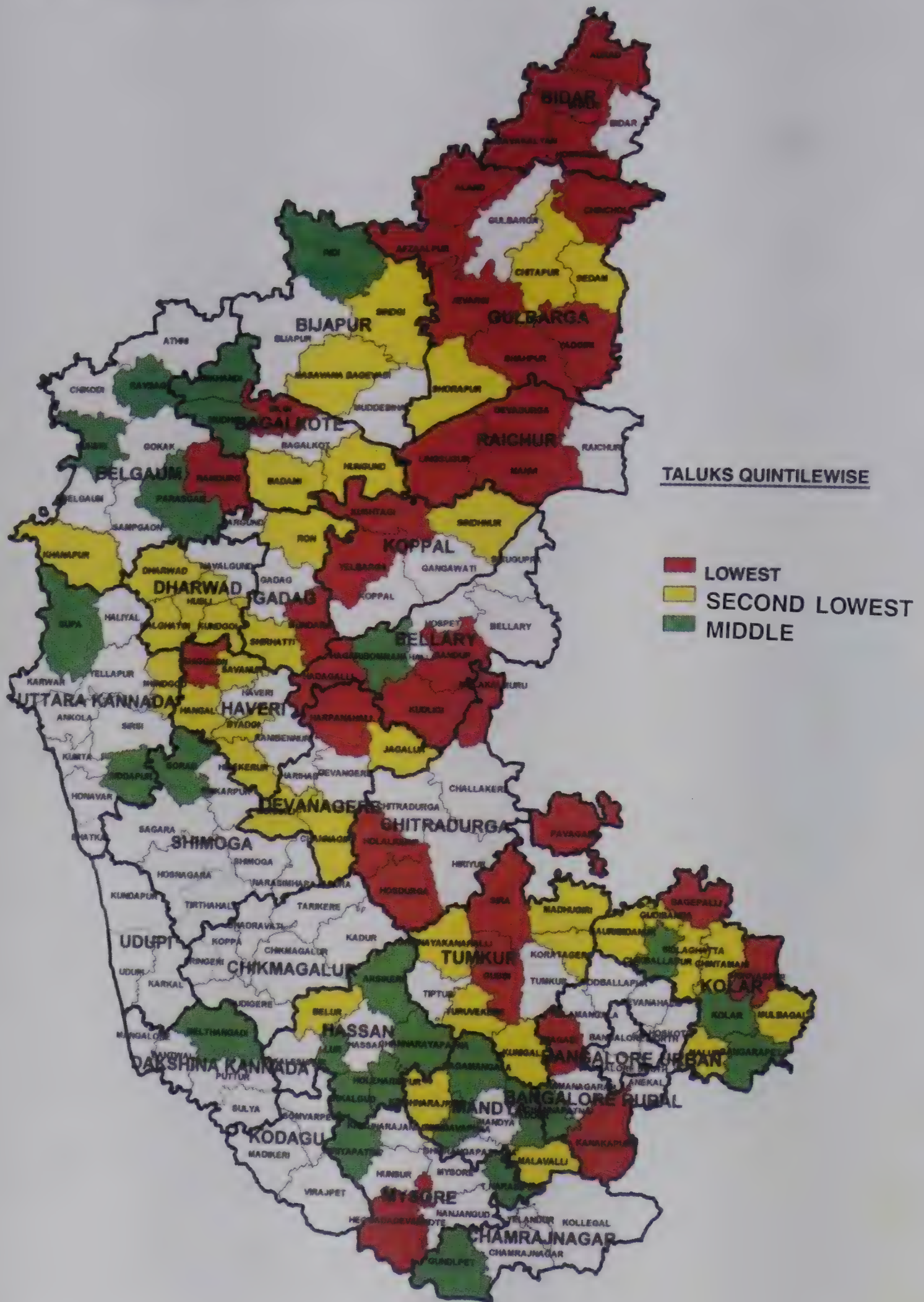
There are a large number of vacancies of health professionals and trained personnel in the disadvantaged northern

KARNATAKA

DISPARITIES IN HEALTH STATUS



IDENTIFICATION OF REGIONAL BACKWARDNESS BASED ON THE AGGREGATE DEVELOPMENT INDEX



district. It is necessary to fill up these posts. Since there is reluctance on the part of health personnel to join these posts and work there, the possibility of recruiting personnel on a district basis (on condition that they will continue to work there up to a certain level) must be explored and implemented without delay.

Study on disparities

A study was sponsored by the Task Force on Health and Family Welfare to look into the disparities in Health and Health Care in the State. The study "Disparities in Health and Health Care Services – 2001" used the following four parameters.

- Health determinants
 - Health status
 - Health resources allocation
 - Health care utilization.
- (a) For **health determinants**, the following indicators were used in the study:
- Percentage of literates in 15+ age groups.
 - Percentage of houses in which both wall and roof were made of permanent materials.
 - Percentage of households with access to clean water.
 - Percentage of families with latrine.
 - Percentage of households with electricity.
 - Percentage of families above poverty line.
- (b) For disparities in **health status**, no single indicator can adequately describe the status. A limited number of specific indicators was used. Child health indicators being more sensitive to equity, the following indicators have been used.
- Under – 5 mortality rates.
 - Percentage of under – 5 children whose nutritional status is within normal limits, based on weight for age.
 - Annual parasite index of malaria.
 - Point prevalence of tuberculosis (pulmonary and extrapulmonary).
 - Percentage of children below 5 years reporting diarrhoea during the previous 2 weeks.
- (c) For disparities in the provision of **government primary health care facilities**, the following parameters have been used:
- Primary health centres per 100,000 population.
 - Number of medical officers working at the primary health centres per 100,000 population.
 - Number of paramedical personnel (staff nurse, block health educator, laboratory technician, auxiliary nurse midwife, male health worker) working per 10,000 population.
- (d) For disparities in the pattern of **utilisation of health services** (public and private), the parameters used were
- Immunisation coverage of children, 12-23 months, under the Universal Immunisation Programme (6 vaccines).
 - Percentage of pregnant women who received 3 or more antenatal check-ups during recent pregnancy.
 - Percentage of women who received 2 tetanus toxoid / booster injections during recent pregnancy.

EQUITY IN HEALTH

INDICATORS

Health Policy

- Political commitment to equity in health
- Community involvement
- Organisation and management

Health care resources (inputs)

- Budget allocation and utilisation according to needs.
- Health personnel per 100,000 population
- Coverage by primary health care (PHCs per 100,000 population)
- Coverage by referral system (number of hospital beds)

Health Determinants (inputs)

- Education (Primary education; adult literacy)
- Access to adequate safe drinking water
- Sanitation; latrines; waste disposal; environment
- Nutrition security (Calories; proteins; micronutrients)
- Housing
- Income; purchasing power.

Health care utilisation (output)

- Utilisation of health care services
- Immunisation coverage
- Antenatal check-ups
- Deliveries by trained health personnel
- Use of family planning methods.

Health status (outcome)

- Infant mortality rate
- Under – 5 mortality rate
- Life expectancy at birth
- Nutritional status
 - birth weight; under – 5 nutrition; anaemia.
- Reduction in incidence / prevalence of common diseases
 - malaria, tuberculosis, diarrhoeas.

- Percentage of deliveries conducted by Trained Health Personnel during recent delivery.
- Percentage of current users of any family planning method.

Utilisation of health care presupposes the need, availability and accessibility of health care services.

Based on the findings, **composite rankings** were worked out. The following seven districts came up high in the ranking.

- Kodagu
- Uttara Kannada
- Chickmagalur
- Udupi
- Dakshina Kannada
- Shimoga, and
- Bangalore, Urban.

Except for Bangalore Urban (incorporating Bangalore City Corporation), the other districts belonged to the coastal and contiguous areas. The last seven districts were

- Koppal
- Gulbarga
- Raichur
- Bellary
- Bagalkot
- Bidar, and
- Bijapur.

Relationships

The districts with low health determinants (Bellary, Gulbarga, Koppal and Raichur) had low health status. The relationship was highly significant.

Most highly significant was the relationship between utilisation of primary health services and health. The districts with low utilisation of primary health care services (Bellary, Gulbarga, Bidar, Koppal, Raichur) had low health status, whereas the districts with high utilisation of primary health services (Dakshina Kannada, Uttara Kannada, Udupi, Kodagu and Shimoga) had high health status.

Equity in health care requires equality (?) in the distribution of health determinants (outside the narrowly defined 'health' services) but more importantly in the **utilisation of health care services**. It is not enough to make available the health care services but they must be of good **quality** so that the people will utilise the services.

1.2. GENDER DISPARITIES

There are significant differences between the health indices for men and women in the different districts.

(i) Life expectancies at birth:

The differences between men and women were almost 9 years in Kolar and Hassan districts, whereas it was less than one year in Bangalore Urban District.

District	Women	Men	Difference
Kolar	67.42	58.54	8.88
Hassan	70.00	61.02	8.98
Bangalore Urban	66.10	65.48	0.62

(ii) **Gender related Health Index (Human Development in Karnataka, 1999) 4 districts with better GHI:**

Dakshina Kannada	:	0.807
Kodagu	:	0.718
Bangalore (Urban)	:	0.693
Uttara Kannada	:	0.677

4 districts with low GHI:

Bellary	:	0.484
Bidar	:	0.523
Bijapur	:	0.523
Gulbarga	:	0.530

These differences are the composite effect of regional and gender disparities.

(iii) **Gender disparities are seen in the nutritional status:**

Girls are worse off than boys, if we consider weight for age (undernutrition) or height for age (stunting).

Percentage weight for age (12-71 months), 1996-97.

Percentage	Boys	Girls
> 90%	11.2	7.6
75-90%	37.9	40.1
60-75	45.2	45.5
< 60%	5.7	6.8
	100.00	100.00

NNMB Rural, 1999

(iv) Sex Ratio:

There has been adverse female sex ratio. This has shown a slight improvement in 2001 census (964) compared to the 1991 census (960). But there is a startling decrease in the sex ratio of the population in the age group 0-6 years.

Population in Age Group 0-6 years and Sex ratio

Districts	1991		2001		1991		2001	
	Male	Female	Male	Female	Sex Ratio		Percentage Decadal Growth Rate	
					1991 F/M*1000	2001 F/M*1000	1991-2001 Male	1991-2001 Female
Bangalore	355711	337912	375585	353030	950	940	0.56	0.45
Bangalore (Rural)	133378	127599	110216	103705	957	941	-1.74	-1.87
Belgaum	316944	302531	312304	288418	955	924	-0.15	-0.47
Bellary	187804	179800	154587	146630	957	949	-1.77	-1.84
Bidar	130458	125531	119195	115300	962	967	-0.86	-0.82
Bijapur	284405	271791	138293	134302	956	971	-0.52	-0.52
Bagalkot	0	0	131239	123240		939		
Chikmagalur	74432	72760	66726	64321	978	964	-1.04	-1.16
Chitradurga	185013	177524	97220	91941	960	946	1.54	1.40
Davangere	0	0	116375	110498		949		
D.Kannada	193036	186417	109227	104030	966	952	-1.46	-1.57
Udupi	0	0	55647	53131		955		
Dharwad	311296	296234	106675	100671	952	944	-1.21	-1.21
Gadag	0	0	67982	64644		951		
Haveri	0	0	98899	95009		961		
Gulbarga	269659	258689	262848	246385	959	937	-0.25	-0.48
Hassan	121120	117177	98048	94477	967	964	-1.90	-1.94
Kodagu	36313	34760	33796	33013	957	977	-0.69	-0.50
Kolar	180627	175464	161002	157069	971	976	-1.09	-1.05
Mandya	123204	118152	98949	92728	959	937	-1.97	-2.15
Mysore	247858	239338	154955	150292	966	970	-1.52	-1.52
Chamarajanagar	0	0	55137	52782		957		
Raichur	240742	232267	136273	131145	965	962	-0.08	-0.21
Koppal	0	0	102481	96134		938		
Shimoga	150434	144609	101473	97290	961	959	-3.25	-3.27
Tumkur	177259	171970	149272	142099	970	952	-1.58	-1.74
U.Kannada	96139	91254	87095	82385	949	946	-0.94	-0.97
KARNATAKA	3815832	3661779	3501499	3324669	960	949	-0.82	-0.92

There is improvement only in the districts of Bidar, Bijapur, Kodagu, Kolar and Mysore. All other districts have shown worsening of the sex ratio. This is a matter of concern. Is it due to deterioration of the utilisation of health services for the girl child by the parents or neglect of the girl child? Is there worsening female infanticide? These and other possible factors need further analysis by single years in the 0-6 year age group and action arising therefrom.

1.3. SOCIO-ECONOMIC INEQUALITIES AFFECTING HEALTH

The income differentials have widened after adopting the liberalisation, globalisation and commercialisation. This has affected health. While the rich have become richer, the poor are left with less purchasing power, which affects health.

Very little data are available in the relationship of health status to the socio-economic inequalities in the State. It is important to focus on the disparities based on the social and economic status. One way of finding it will be to study the differences between the social classes based on their occupations

- Professionals
- Managerial / Technical
- Skilled
- Semi-skilled
- Unskilled
- Businessmen
- Land owner
- Landless labour
- Unemployed

A survey in different parts of the State will be useful to bring out the differences in health status, using the common indicators, such as infant mortality rate, under – 5 mortality rate, crude birth rate, crude death rate and life expectancy at birth (healthy life expectancy?).

It is also necessary to conduct studies on the Scheduled Castes and Scheduled Tribes population.

Decentralisation and equity

If care is not taken, decentralisation of health care resources management and allocation of resources may result in an unequal inter-regional distribution that may adversely affect the most vulnerable populations. Decentralisation may result in the transfer of power from the central to the regional or local elites. Decentralisation may lead to transfer of the financial burden of health care to local communities, who may not be in a position to carry that burden.

Many questions need to be answered:

- Is decentralisation of health care services taking place? If yes, how are decisions being made on resource allocations between regions?
- How is the community involved in making the decisions?
- Is the civil society involved?
- Has decentralisation brought about a transfer of providing care from institution to the family/community? Are they able to cope with the situation? Is there any support given to them?

Recommendations

- *All policies of the Government (State and local), likely to have direct or indirect effect on health, should be governed by the principle of equitable access to effective care to meet the needs of the people; they should be formulated such that disadvantaged (less forward) are addressed to reduce inequity.*
- *Data must be collected to get the actual inequities, based on gender, age, region and disabilities. Monitor inequities in health based on social, economic and health care services, disaggregated with respect to age, gender, socio economic status, geographical regions and others.*
- *The Health System must improve availability and access to quality health care (particularly primary health care and public health) in the underserved talukas / districts and for the poor and vulnerable population. Ensure better utilisation of the primary health care services by making the facilities fully functional and people friendly and, through monitoring and supervision, improve the quality of service.*
- *Health Services must work across organisational boundaries in partnership with the local government and the sectors that play important role in determining health, such as education, nutrition, water supply and sanitation, labour and others. Schemes such as Nirmala Karnataka Programme under Rural Development and Panchayat Raj should be implemented vigorously in the backward (healthwise) talukas / districts.*
- *The State Government and the local governments should take special steps to bring up the health status in areas where the health status is below the State average, by discriminating positively (with additional inputs) in favour of the disadvantaged areas.*
- *In the large and undivided districts (Gulbarga and Belgaum), the districts should be divided into two and a post of Additional DHO / DMO should be created with additional team of Programme Officers.*

2. QUALITY OF HEALTH CARE

Quality of health care has not been addressed to any extent in Karnataka as the preoccupation of the Government and the health system has been on increasing the availability and accessibility of health services. It is important to consider the quality of care, which is being provided by the existing health care institutions, health personnel and programmes of individual health care and public health.

Definition

Quality of Health care has been defined in various ways:

- “Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired outcomes and are consistent with current professional knowledge”. – Institute of Medicine, U.S.A., 1990.
- “Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs”. – Bureau of Indian standards, 1992.
- “Quality of care may be defined as anticipating, meeting and exceeding clients needs and expectations”. – Willy De Geyndt, 1995.

All the definitions are applicable but none of them are fully satisfactory. But certain characteristics stand out. Quality of health care applies to **individuals and populations**. The **outcomes** of the care are important and they depend on the current professional knowledge. It is therefore a **moving target**. Quality must be able to satisfy the needs and even exceed the **needs and expectations**.

The present situation of quality of care is not satisfactory, whether it be regarding the facilities available, the process, the procedures or the output. These affect the outcome. There are many instances of unacceptable infections because the procedures are not followed, e.g., laparoscopic operation in the hospitals due to improper sterilization of equipment or cataract operations in camps, due to contamination of fluids used.

Factors affecting quality of care:

Various factors affect Quality of Care. Among them are:

- Competence, compassion and courtesy shown by the health providers and carers.
- Consistency, dependability and reliability of performance.
- Responsiveness: readiness to provide appropriate service on time.
- Access, approachability; ease of contact.
- Communication; information.

- Understanding the needs of the individual, the family and the community.
- Credibility, trustworthiness, integrity.
- Confidentiality, privacy, dignity of the person.
- Best interests of the person; safety.
- Autonomy, informed consent.
- Facilities available.]

Dimensions of health care quality:

There are many dimensions to quality of health care.

- **Efficacy** : Is the procedure / care useful?
- **Appropriateness** : Is it right for this person / community?
- **Accessibility** : Can the person / community get it?
- **Effectiveness** : Is it carried out well?
- **Relevance** : Does it meet the needs of the community?
- **Equity** : Is it fair to all concerned?
- **Efficiency** : Is it cost-effective?
- **Continuity** : Did it progress without interruption? Was there appropriate follow-up?
- **Outcome** : Was the result of the intervention satisfactory and did it improve the health of the person / community?

Public / Private Health Care Services

Quality must be assured whether the services are provided by the public or private sectors. It must also be assured whether it is primary, secondary or tertiary care.]

2.1 STANDARDS

To maintain acceptable quality, it is necessary to have certain standards.

What are standards?

Standards can be defined in various ways. They can be 'degrees of excellence', 'minimum acceptable' (necessary, reasonable and possible), a basis for comparison or they can be models for imitation. We often set standards as 'minimum acceptable'. These minimum standards should be set in 6 months and implemented within one year thereafter. The optimum standards (based on benchmarks and best practices) will be developed for all levels of institutions; these must be implemented in 5 years.]

Why standards?

- Health care institutions and programmes : The standards will ensure effective and efficient care of the people.
- Government and organizations use standards to protect the health of the population.
- Consumers are helped to know whether they are getting the right care, delivered by the right personnel at the right time.
- Standards help to determine whether the expectations can be met, provide guidelines for establishing a new health care facility and can be a defense in case of litigation.

There are different types of standards:

- **Structure:** What we use (inputs)
 - Human, financial, physical and other resources, buildings (space required), maintenance, drugs, equipment, diagnostic facilities, transport, etc.
- **Process:** What and how we do (procedures)
 - Care; service; management. It includes access, diagnosis, interventions, and technical and administrative support and health promotion activities.
- **Outcome:** Results of care
 - Clinical; non-clinical. It includes health status, improvement of function and quality of life.

Process factors:

- Type of service (patients; public)
- Standing instructions (patient care; public)
- Documentation: medical records; programme records.
- Medical / nursing audit.
- Deaths during surgery / anesthesia
- Rational use of drugs: antibiotics, analgesia, etc.
- Un-indicated transfusions
- Iatrogenic complications
- Hospital acquired infection
- Sterilisation procedures.
- The manner of carrying out public health measures.

Outcome Measures:

- Immunisation: Number of people covered; area covered; result
- Length of stay in hospital; patient satisfaction
- Functional result.
- Performance appraisal.
- Avoidable deaths.
- Re-admissions
- Cost of treatment.
- Efficiency: Cost: benefit ratio.
- Effectiveness: outcome vs. objectives.

How are standards set?

Standards are based on collective judgement, through consultations. They should reflect values of the society and profession and include competence, efficiency, effectiveness, equity and ethics.

Who sets standards?

Standards may be set by Government, health care providers, health care facilitators or the people. The ideal is to have a combination of all of them, bringing in different points of view.

Requirements for developing standards:

To rationally develop standards it is necessary to have knowledge about the type of the health care institution (or programme), the location (urban, rural, remote area), services provided (primary, secondary or tertiary) and the clientele. It is also necessary to have the skills and resources for developing, implementing and maintaining standards.

Standards may be set for various activities, procedures, and institutions. They can be set for outpatients, inpatients, departments (such as Obstetrics and Gynaecology; nursing) or for specific diseases (such as HIV / AIDS), Community Health, Health Administration or Financial Management.

How are standards used?

Standards may be used for self-assessment of health care institution, department or programme, inspection (power to recognize or impose penalty) or accreditation, certification and registration.

Standards are dynamic

Standards are not set once for all. They change with changes in health care (professional practice, preventive and treatment modalities, consumer expectations, economic, social and political situation and changes in technology). They also change with changes in the collective judgment of the stakeholders.

2.2 QUALITY ASSURANCE

Quality assurance ensures quality of services. This includes development of optimum infrastructure, organization of facilities and the delivery of services.

Infrastructure would include:

- Buildings: adequate space for the functions and maintenance.
- Equipment, appropriate for the level of care.
- Diagnostic facilities.
- Trained personnel, adequate numbers and quality, following the staffing norms.
- Range of clinical services at each level.
- Availability of essential drugs at each level.

It is also necessary to ensure proper management and scope for continuous improvement.

Organisation for Quality Assurance

- Establish methods and procedures for Systematically monitoring the quality of care given to the patients.
- Make regulation and assessment a permanent component of health professional's activities.
- Provide all health personnel with training in Quality Assurance.
- Quality assurance involves
 - provider groups,
 - researchers,

- public health authorities,
- consumers and
- civil society.

The strategy for Quality Assurance should balance

- Rights of the management (health care provider)
- Rights of doctor and other health personnel to participate in self-improvement; and
- Rights of the patient and people to receive efficient and effective care.

There is the potential for conflict between clinical freedom, management control and patient satisfaction.

Data for Quality Assurance

Various data are required to assure quality.

- Medical Records.
 - The condition of the person.
 - All significant interventions between the person and care providers.
 - Information regarding response.
- Incident review relating to
 - attendance by the health personnel
 - investigation
 - medication; management
- Hospital / Health Information system.
- Patient and people satisfaction / outcome of intervention surveys.

Disadvantaged groups

Quality assurance measures must specially address utilization and satisfaction by the disadvantaged groups. These should include the poor, scheduled castes and scheduled tribes, women, children and the elderly.]

Regulation of health care services

It is the responsibility of the State to ensure quality of health care. For this, there is need to have regulations which would assure quality. The State Government had enacted a law for the purpose but it was not enforced. In 1998, the Government introduced a bill in the Legislative Council but this was not followed up. The bill requires considerable modifications. The Task Force has forwarded to the Government, at Government's request, a draft legislation which could serve the purpose and is likely to meet the needs of all the stake holders. It provides for the registration and maintenance of certain standards based on the type, size and location of all health care institutions.

2.3 ACCREDITATION

Quality of health care can be ensured by mandatory regulations or by voluntary accreditation. Voluntary accreditation is the preferred method and is followed by a large number of countries.

Accreditation is a process where standards are set, compliance with standards is measured and the institutions are recognized of adherence to the standards of care. It means that the particular health care institution has voluntarily sought to be measured against the standards for the particular level of health care and has been found to be in substantial compliance with the standards.

The major groupings of accreditation include professional (medical, nursing and allied professions), departmental (organization, emergency services, investigating services, operation theatre, etc.,) and management and support services (hospital management, medical records, library, catering, transport and environment).

Recommendations

- *Have the legislation for the registration and regulation of health care institutions enacted and implemented. Have minimum acceptable standards worked out by independent committees for health care institutions at different levels and locations and for public health measures.*
- *The Joint Directors, Medical and Public Health, will be designated as the persons in charge of Quality Assurance. The Administrative Medical Officer in charge of each hospital will be responsible for ensuring quality of care in each institution.*
- *The professional bodies may be encouraged to have accreditation of their member institutions. The Indian Medical Association, Karnataka State Branch may take the initiative.*

3. PRIMARY HEALTH CARE

Primary health care is essential health care, *universally accessible and acceptable with community participation and includes promotion of health, prevention of diseases and rehabilitation and management of common illnesses at affordable costs.*

Primary Health Care is “the key to attaining an acceptable level of health care for all by the year 2000, as part of overall development and in the spirit of social justice” - The Declaration of Alma Ata 1978.

The year 2000 has come and gone. We have to ensure **“HEALTH FOR ALL – NOW!”**

What is meant by “Health For All”?

“With the objective of continually improving the state of health of the total population, every individual should have access to primary health care and, through it, to all levels of a comprehensive health system”

- Strategies for health for all by the year 2000, W.H.O. Geneva, 1979

Primary health care has to be the hub of the health system. It has to ensure complete coverage of the total population of the State.

Comprehensiveness

Primary Health Care has to be comprehensive. It addresses the main health problems in the community, providing *promotive, preventive, curative and rehabilitative* care. These services reflect and evolve from the social and political conditions prevailing in the state and the values upheld by the people. The services include

- Health Education and its promotion
- Promotion of nutrition
- Adequate supply of safe water
- Basic sanitation
- Maternal and child care and family welfare services
- Immunisation against the major infectious diseases
- Prevention and control of the locally endemic diseases
- Appropriate treatment for common diseases and injuries

Community Participation

Primary Health Care requires and promotes maximum community participation. Primary Health Care can succeed only with the active involvement and empowerment of the people. It also needs decentralized governance, which can bring in the much needed community participation. Community participation is the process by which individuals and families assume responsibility for their own health and the health of the community and contribute to their and the community's development. The healthier the people are, the more likely that they are able to contribute to the social and economic development. In turn, such development helps in better health. They are mutually supportive.

Intersectoral Collaboration

Many of the determinants of health are outside the confines of the narrowly defined "health services". Primary health care involves all related sectors, such as education, agriculture, food and nutrition, industry, housing, women and child welfare and others. It demands coordinated efforts of all these sectors.

Decentralization

Primary health care requires decentralization. There is need for delegation of responsibility and commensurate authority. Ideally, community itself provides managerial control. Control of a technical / professional nature has to come from other levels of the health system.

Logistics and Supply

Once the goals and objectives are set, it is necessary to make available the supplies on a priority basis. Decisions have to be made on the components to be included in the community's primary health care programme and the appropriate technologies to be employed. The seasonal fluctuations in incidence of diseases, changes in demand for health care and local variations must be taken into account. A list of essential drugs and equipments must be made and action taken for budgeting, procurement, storage, distribution and control.

Appropriate Health Technology

Appropriate technology is one of the core components of primary health care. Appropriate technology includes practical, scientifically sound, health measures, for promotive, diagnostic, therapeutic or rehabilitative purposes, that are accessible and affordable to the community. Through this approach, technology is made to serve society's needs. Machinery or equipment, if involved, is simple to run and repair, and locally produced and maintained. It is used to develop self-reliance and self-determination.

Examples of appropriate technology for health are:

- a) Home-based oral rehydration solutions (ORS) have proven efficacy to combat dehydration.
- b) Use of herbal and home remedies for treatment of minor ailments.
- c) Use of neem sticks for brushing teeth, massage of gums and gargling after every meal for promoting good oral health.
- d) Use of Jaipur foot as an aid for orthopaedically disabled persons.
- e) Intraocular lens at low cost and indigenously produced.
- f) Use of hay-boxes as incubators for newborns.
- g) Use of sputum microscopy for diagnosis of pulmonary tuberculosis, over chest x-ray, as was accepted by the National Tuberculosis Programme.

- h) Simple kits for Traditional Birth Attendants (dais) with a sterilised blade, clean tie, swab, soap and polythene sheet.
- i) 'Nutrition' bangles for detection of malnutrition in children.
- j) Dip sticks for urine testing of sugar and albumin in the field.
- k) Low cost, effective health education kits with messages painted on cloth and use of puppets.
- l) Bicycle driven ambulance.
- m) Low cost lightweight rehabilitation aids.

Essential Drugs

Primary health Care requires the availability of all essential (including life-saving) drugs appropriate for the level of health care. This should depend on the expertise available and the needs. The Task Force had recommended that the provision for the drugs must be increased by Rs. 25,000/- per PHC so that all essential drugs are available at the PHC at all times. The Government has responded positively and allotted the additional Rs. 25,000/- per PHC for the purchase of essential drugs.

Laboratory Services

Health Care depends on diagnostic quality, which in turn requires laboratory tests in specific instances. Many of the laboratories attached to the Primary Health Centres have been non-functional because of lack of trained laboratory technicians and equipments, such as microscopes and reagents. The Task Force had recommended that all laboratories must be staffed with trained technical persons equipped with the necessary instruments, accessories and reagents. Government has taken action to fill up most of the vacancies. The newly appointed technicians have been given training. The Government has also allotted additional funds for the purchase of microscopes (where not available), equipment, glassware and other accessories and reagents.

3.1 RURAL HEALTH

Primary Health Care is channeled in the rural areas mainly through the activities around the Primary health Centres (1676 centres as on 31.12.98), the sub-centres (8143 as on 31.12.98) and Community Health Centres (252 as on 31.12.98), which are the first referral units. There is need for partnerships at various levels between the first contact care, the first referral unit and the local people. The PHC and CHC should have sufficient freedom to develop partnerships at the local level. Co-ordination Committees can be formed to have more effective functioning of these centres.

Primary Health Centres are of different types, varying in the population and area covered, the number of subcentres, the facilities and the staff. It is necessary to reorganize the PHCs, considering the population and area covered.

Vacancies

There have been a large number of vacancies of doctors, laboratory technicians and ANMs. The interim Report had made a recommendation to have them filled up. Many of them have been filled up mainly through contract appointments, but a number of vacancies still remain. It is necessary to have a continuous process of anticipating the vacancies (caused by promotion to higher post, deputation for higher studies and attrition due to retirement, etc) and having them filled up promptly.

Male Health Worker

There are a large number of vacancies of male health worker. Considering the work being done and the need, all the vacant posts need not be filled. We can have one male health worker, one for each gram panchayat. The technical control of the male health worker will be vested in a designated PHC doctor. Administrative control will be with the Gram Panchayat.

Availability of Staff

The Interim Report had recommended that all key staff attached to the Primary Health Centres must stay in the quarters. Such a recommendation has been made long ago as early as 1961 by the Mudaliar Committee. "Recommendation 8: The Primary Health Centre should provide residential accommodation to all the personnel of the centre....". Where quarters are available, the District Health Officers should ensure that the staff stays in the quarters. Where repairs are necessary, they should be carried out urgently. If quarters are not available, action must be taken to have quarters constructed. In the meanwhile, houses may be taken on rent.

Working timings

The working times of the primary health centres and subcentres should be suitably fixed. The people must be consulted as regards their convenience to attend these centres.

Medical Colleges and Primary Health Care

Training of medical students has been mainly on hospital care. Efforts to make them more community based have met with limited success.

The Medical Colleges in the state should take up the running of 3 PHCs, together with the sub-centres. It would be ideal to include the Community Health Centre to which the PHCs are attached. The Medical Colleges should have full administrative and technical control. They will be given grant-in-aid. This arrangement would enable the Medical Colleges to implement the concepts of Primary Health care and train the medical students in Primary Health care and the management of Primary Health Centres.

Nurturing the Doctor at PHC

Doctors are often reluctant to work at PHC due to a variety of reasons, including remote, difficult to reach locations and the lack of social and professional facilities. It is necessary to nurture the young doctor, making him / her competent and comfortable to deal with the situation. The doctor has to work as leader of the health team at the PHC.

A rethinking is necessary whether the fresh graduate should be posted to the PHC; "Posting to a Primary Health Center should be normally after one or two years of service in a hospital under the supervision of a senior medical officer" (Mudaliar Committee 1961)

Incentives to practice in disadvantaged regions

There are certain areas in the State, particularly in the northern parts, where government doctors are not willing to serve in the PHCs. Vacancies continue to exist for years. A trial may be made to induce doctors to settle down in these areas and practice as general (family) practitioners by giving incentives. This may be in the nature of honararium of Rs.5,000 p.m in the first year and gradually reduced so that it disappears at the end of 5 years.

Women's Health

The utilization of the services of PHC by women has to be made optimal; a study may be carried out. It is also necessary to study violence against women and child abuse. The Medical Officers must be trained to recognize such problems and take appropriate actions. Having a Lady Medical Officer at every PHC will be an advantage. The aim will be to have one lady medical officer (additional) in every PHC within the next 10 years.

Alternate Practitioners

In view of the reluctance of MBBS qualified doctors to work in rural areas, should we think of alternate practitioners (family physicians with shorter period of study like LMP; physician assistants; nurse practitioners) trained for rural health service? Can they be selected or trained from Staff Nurses or Auxiliary Nurse Midwives who have already worked in rural areas? On completion of appropriate training, they will work in rural areas, providing comprehensive primary health care. One suggestion was to have two streams in the MBBS course. After a general common course (of 2-3 years), one stream will follow the usual course of study; the other stream will be limited to those who are interested in rural service and public health. They will be taken into government service in the rural area. Their further career will be in public health, if they specialize in public health.

Induction Programmes

It is necessary to have induction programmes for the staff. To start with, it will be for all newly appointed doctors. Later, orientation programmes can be provided to all staff at all levels.

Subcentres

There is need to strengthen the working of the subcentres and make optimum use of them. It is necessary to improve the buildings and where they are not available, take on rent appropriate buildings.

Primary Health Units (PHU)

Karnataka has 583 PHUs as on 31.12.98. It is necessary to make optimum use of these PHUs. The alternatives would be to convert them into PHCs (depending on the need), or have them operated by the Indian Systems of Medicine and Homoeopathy or have them abolished, if it is decided that particular PHUs are not needed. The decision may be taken in consultation with the people in the region.

Water Supply and Sanitation

The Department of Health must be involved in drinking water supply and sanitation. The Medical Officer and other staff of the PHC must ensure the safe quality of drinking water. He / She should also promote the construction and use of toilets.

Nutrition

The health professionals and workers must get involved in the nutrition adequacy of the people, especially the young children and women.

Village Health Committees

Each village can have a village health committee as part of the village development committee (intersectoral). The committee can be involved in microplanning and monitoring of health care services at the village level. Two representatives from each Committee will be members of the PHC level co-ordination committee (other than the board of visitors); the co-ordination committee will include representatives of voluntary organizations, professional bodies and people's representatives. The committee will help the health team at PHC to improve the services.

3.2. URBAN PRIMARY HEALTH CARE

Urban health is not better than rural health as far as the poor are concerned. Disaggregated health indices show that the health of the urban poor (in the slums and scattered through the towns and cities) is often worse. There is need for comprehensive health care, especially in the slums, where the people do not have social support, which is present in the rural areas.

The Urban Family Welfare Centres and the Health Centres under IPP VIII (in Bangalore City and now being extended to 11 other cities in Karnataka) are expected to concentrate on Family Welfare. They have to be involved in Comprehensive Health Care.

It is necessary to ensure primary health care in the urban areas. There must be one Urban Primary Health Centre for 50,000 or less population in cities and towns. The existing resources such as health centres, urban family welfare centres and maternity homes must be mapped and their services consolidated. These primary health centres will be the responsibility of the local body (Corporation or Municipality). Technical guidance will be provided by the Directorate of Health and Family Welfare Services. Some of the smaller municipalities may not be able to raise sufficient finances; they will need support.

Medical Care at the first contact level is provided mainly by private practitioners (present in relatively large numbers) and by nursing homes, Teaching and other hospitals in the cities and municipalities. But this is not Comprehensive Health Care; it is almost completely curative medicine. Including the district, teaching, major, specialized, general and maternity hospitals, there are 176 government hospitals with 23,223 beds (1997-98) apart from the voluntary and private hospitals.

3.3. REFERRAL SYSTEM

Primary Health Care requires the support of successive levels of referral facilities (secondary and tertiary) for its effective functioning. Primary Health Care looks after the common ailments. Other complex health problems cannot be managed at the first contact level; they require more specialized care. Patients have to be referred to an appropriate health facility, which will have more highly trained staff capable of dealing with a progressively wider range of specialized health interventions that require more sophisticated technology.

At present the referral system does not work. The lower levels are bypassed. This leads to overburdening the higher levels. We have to work out an effective health system chain of specialized clinical and public health care.

The first referral is the Community Health Centre and where it is not available, the Taluk Hospital. The next level is the sub divisional level hospital and above it the District Hospital. These provide secondary care services. Beyond the district hospitals are the Speciality hospitals and the Teaching Hospitals, which can provide secondary and tertiary levels of care.

When a patient is referred, there should be

- No Delay; no waiting
- Priority for Critically Ill Patients
- Availability of the required specialists and facilities

The Referral Centre must be strengthened through:

- Creating awareness among the people of the advantages of referrals
- Peoples Committees at all levels to ensure effective functioning of the referral system.

Effective communication requires availability of linkage by the telephone. Hence every PHC must have a telephone. The Government is taking action to install a telephone at the PHC. Immediate advice can be given and received over a communication link.

There is also need for transport. "Recommendation: There should be suitable conveyance including an ambulance and a jeep" (Mudaliar Committee, 1961).

The referral centre must:

- Cater for a defined geographical area and all the PHCs in that area;
- Give periodic consultancy services and training;
- Provide feedback on the patients referred.

Referral is a two way process from the primary health centre to the secondary care centre and back to the primary health centre.

The Task Force had recommended that the secondary care institutions in progress under KHSDP should be completed expeditiously and made functional with the required manpower, equipments and accessories. These buildings are understood to be in good progress. The OPEC Hospital at Raichur has been opened. It has to become fully functional.

Recommendations

- *Have the philosophy of comprehensive primary health care accepted through training and advocacy and implemented by all concerned: the people and the health services.*
- *All existing vacancies of doctors, pharmacists, laboratory technicians and ANMs in the primary health centres and subcentres must be filled up immediately. Appointments made on contract basis must be regularised. Have regular appointments made based on needs for which there must be a continuous assessment and monitoring of vacancies likely to occur in the PHCs and subcentres.*
- *Appoint staff nurses at all PHCs, creating posts where there are none at present.*
- *All essential staff, including doctors, pharmacists, nurses and ANMs attached to the Primary Health Centres must stay at headquarters.*
- *Have a construction and renovation programme such that every PHC will have a suitable building within the next 5 years and quarters for the essential staff within the next 10 years. In the interim period, take suitable buildings on rent for PHCs and staff quarters.*
- *Consider the possibility of making available rural medical practitioners / physician assistants / nurse practitioners / nurse obstetricians available for service in the rural areas, where qualified MBBS doctors are not available.*
- *There is need to have the telephones at the PHCs installed without delay for better communication. Make arrangements for the speedy transport of patients to the referral centers by provision of ambulance vans or funds for the speedy transport of patients to the referral centers by provision of ambulance vans or funds to hire available transport, in the case of the poor.*

- *There is need to have fully functional laboratory services, with trained technicians.*
- *Have Village Health Committees at Gram Panchayat level. Two representatives each of the committees will be members of the PHC level co-ordination committees, which will include representatives of voluntary organisations, professional bodies and elected representatives.*
- *The Department of Health must stipulate the working hours of PHCs and subcentres to suit the community needs.*
- *PHCs must have round the clock service. Make available the services of Lady Medical Officers. Progressively increase the number of lady medical officers at PHCs such that, in the course of the next 10 years, every PHC will have one male and one female medical officer.*
- *Every Medical College must take up the running of a minimum of 3 PHCs for the service of the people and training of students.*
- *An appropriate referral system (with feed forward and feedback) and linkages between PHCs and Secondary Care Institutions must be put in position to make primary health care more efficient and effective.*
- *Have Urban Primary Health Centres, one for 50,000 population in cities and towns, converting the existing resources such as health centers, urban family welfare centers and maternity homes. While these Urban Primary Health Centres will be the responsibility of the local body (Corporation or Municipality), technical guidance will be provided by the Directorate of Health and Family Welfare Services.*
- *Every PHC will display prominently a Charter of Rights of patients.*
- *Where there have been vacancies of 3 years or more at PHCs, graduates in Medicine will be encouraged through incentives to settle down and have General (Family) Practice.*
- *Distribute the male health worker, one for each Gram Panchayat / 2 Subcentres, redefining his job responsibilities. He will belong to the District Cadre. The technical control will be with a designated PHC medical officer.*
- *Reorganise the PHCs, PHUs and subcentres (including staffing) considering the population and area covered and accessibility.*
- *Provide interest free loans for the purchase of two wheelers for the transport of health workers at PHCs and subcentres.*
- *The state should encourage the spirit of local innovation, including research by a variety of institutions to develop simple, indigenous technological solutions to health problems.*
- *Appropriate technology that is tried and tested should be introduced into the health system and promoted among the public.*

4. SECONDARY AND TERTIARY HEALTH CARE

4.1 SECONDARY AND TERTIARY HOSPITALS

Primary Health Care is the most essential health care but it requires the support of Secondary and Tertiary Health Care. Referral to higher levels of care is necessary when primary health care is unable to manage patients with difficult health problems. Realising this, Karnataka State has embarked on various projects to improve secondary and tertiary care.

Karnataka Health Systems Development Project (KHSDP)

KHSDP took up the renovation and expansion of 201 secondary care hospitals in the three Revenue Divisions of Bangalore, Mysore and Belgaum. The project is with World Bank Assistance and the estimated expenditure is Rs.546 Crores. The original proposal was to add on 3825 beds to the selected hospitals. But it was observed that the estimate of available beds in these hospitals was not correct; it was an over estimate. Hence an additional 6100 beds will be added on, under the project. The construction of additional buildings for the additional beds and equipping of 198 of these hospitals will be completed by December 2001. Action has to be initiated now itself to ensure smooth transition from the Project to the Directorate of Health and Family Welfare services.

Training of health personnel is an integral part of the project. This will involve the professional and technical upgrading of the knowledge, skills and attitude of the doctors, technicians and others. It will also involve capacity building in administration and management.

KfW Project

The KfW Project is with German Assistance. The intention was to develop 51 secondary care hospitals in Gulbarga Revenue Division. It was proposed to increase the bed strength by adding 1306 beds. In the first phase, 26 hospitals are to be covered. The main objective is to strengthen the referral system. Hence large numbers of equipments are to be procured and installed, those not working are to be got repaired. The project has run into some difficulties. Items not provided for under KfW will be taken up under KHSDP.

OPEC assisted project, Raichur

This is a superspeciality hospital (tertiary care), with bed strength of 350. It is proposed to run this tertiary care hospital in collaboration with the private sector. The District Hospital will be improved and will function as a women and children Hospital.

Secondary and Tertiary Health Care providers may be of different types. Among them are:

1. State Government run health care institutions
2. Central Government Health Care Institutions; Central government health services, railways, defence services and others

3. Hospitals under the Employees State Insurance Scheme, Plantation Act and others.
4. Hospitals run by Public Sector Undertakings
5. Hospitals attached to Medical colleges and other institutions.
6. Voluntary and charitable (Not- for- profit) hospitals
7. Private (for- profit) hospitals and nursing homes, including corporate hospitals.

Bed Strength

Government Health Care Institutions

There were a total of 31,675 beds in the various Government Health Care Institutions. These do not include the institutions belonging to Defence Services, Railways, Employees State Insurance Scheme and Public Sector Undertakings. They do not include the facilities in the Voluntary and Private-for-profit sectors. If we exclude the institutions for specific diseases such as tuberculosis and infectious diseases, the number of beds for secondary and tertiary care will be 23,263 beds in the State Government Sector.

	Hospitals	Beds
District	24	7616
Teaching	9	5907
Major	8	1521
Specialised	16	3320
General/Maternity	120	4899
Total	177	23,263

The District and other hospitals serve as referral institutions. They also cater to the needs of the patients coming directly.

Each district hospital has got the following specialties: General Medicine, General Surgery, Obstetrics and Gynaecology, Pediatrics, Orthopaedics, Ophthalmology, Ear, Nose, Throat diseases, Skin and Sexually Transmitted Diseases, Pathology and Microbiology, Radiology, Anaesthesia and Dentistry. There are also psychiatric clinics in District Hospitals. There are Burns wards in Victoria Hospital, Bangalore, SNR Hospital, Kolar and District Hospital, Bijapur.

Other Governmental Hospitals (as on 31.3.1998)

Institutions	Beds
Central Government	1,854
Employees State Insurance	1,125
Autonomous	1,228
Other departments	336
Local bodies	714

District (secondary care) Hospitals (31.3.98)

District	Beds
District Hospital, Bidar	283
District Hospital, Bijapur	316

District	Beds
District Hospital, Chikmagalur	279
District Hospital, Chitradurga	405
District Hospital, Dharwad	170
District Hospital, Hassan	344
District Hospital, Madikeri	410
S.N.R. Hospital, Kolar	260
District Hospital, Mandya	250
District Hospital, Raichur	250
Mc Gann Hospital, Shimoga	429
District Hospital, Tumkur	325
District Hospital, Karwar	250

Other Major Hospitals (31.3.98)

Hospital	Beds
General Hospital, Jayanagar, Bangalore	300
HSIS Women and Children Hospital, Bangalore	120
K.C. General Hospital, Malleswaram, Bangalore	433
Women and Children Hospital, Chikmagalur	88
General Hospital, KGF	110
Women & Children Hospital, KGF	65

Specialised Hospitals (31.3.98)

Hospital	Beds
Leprosy Hospital, Bangalore	260
T.B. Hospital, Bangalore	234
T.B. Hospital, Bijapur	110
T.B. Hospital, Mangalore	100
MGM TB Hospital, Gadag	62
KNTB Hospital, Kolar	264
TB Hospital, Mandya	148
Wesley, TB Hospital, Bellary	288
Mental Hospital, Dharwad	375
Minto Ophthalmic Hospital, Bangalore	280

KHSDP would establish/upgrade the emergency services and also upgrade the clinical effectiveness of the staff through the training of doctors, specialists, dentists, nurses, laboratory technicians and others. The training will focus on the human, technical and management aspects of caring.

Number of patients treated in district hospitals, 1996

Inpatients : 8,29,975
Outpatients : 2,43,84,272

There is great disparity between the number of hospital beds in the districts. While Dakshina Kannada has 3.3 beds per 1000 population, Raichur had only 0.6% bed per 1000. This will be raised to some extent with the functioning of the OPEC sponsored hospital.

Most of the 23 Medical Colleges have their own teaching hospitals. But some of them use Government Hospitals to satisfy the requirements of the Medical Council of India for recognition. The Government may ask the Private Medical Colleges to put up the required hospitals with sufficient beds in a phased manner so that the Government Hospitals may revert to their original function.

Autonomous Institutions

There are 6 autonomous institutions:

1. Kidwai Memorial Institute of Oncology, Bangalore
2. Jayadeva Institute of Cardiology, Bangalore
3. Indira Gandhi Institute of Child Health, Bangalore
4. Sanjay Gandhi Accident Hospital and Research Institute, Bangalore.
5. Karnataka Institute of Medical Services, Hubli
6. Vijayanagara Institute of Medical Sciences, Bellary

Central Government and Public Sector Undertakings

There are hospitals run by the Central Government, Railways, Space Centre and Public Sector undertakings, which serve the staff and employees and their families. Among the public sector undertakings are the hospitals attached to Indian Telephone Industries, Bharat Electronics Limited, Hindustan Aeronautics Limited and others.

These hospitals generally provide secondary care. Patients are referred to other hospitals for tertiary care

Voluntary and Private Sectors

There are a large number of institutions in the non-governmental sector providing secondary and tertiary care. The following data is taken from the publication "Health Care facilities in non-government sector in Karnataka", Government of Karnataka, 1996.

Distribution of hospitals by type:

Type	Number	Percentage	Bed Number Strength	Percentage
General Hospital	1215	71.09	36,402	89.00
Maternal & Child Health	451	26.39	4,105	10.04
Ophthalmology	42	2.49	385	0.94
Oncology	1	0.06	8	0.02
Total	1,709	100.00	40,900	100.00

Distribution of Hospitals by ownership (non-governmental)

	Number	Percent	Number of beds	Percent
Individual	1,425	83.38	21,066	51.51
Partnership	128	7.49	3,458	8.45
Charitable Trust	68	3.98	4,326	10.58
Registered Society	42	2.46	7,945	19.43
Religious Mission	27	1.58	2,725	6.66
Limited Company	19	1.11	1,380	3.37
	1,709	100.00	40,900	100.00

These hospitals provide secondary and tertiary care in the following specialties: General Medicine, Gynaecology, Obstetrics, Maternal & Child Health, Family Planning, General Surgery, Orthopaedics, ENT diseases, Ophthalmology, Skin and Sexually Transmitted Diseases, Psychiatry, Dentistry, Cardiology, Urology, Nephrology and Oncology.

Staffing of Voluntary and Private Hospitals

Excluding visiting doctors and technicians, the total strength of doctors and nurses employed full-time in the non-government sector hospitals is 21348. On an average, there is one doctor per 6 beds and one nurse for every 4 beds. In addition, there are visiting specialists.

Distribution of users by level of charges:

	Consultation%	Diagnostic tests%	Treatment%
Full Charge	58.1	82.8	76.2
Concessional charge	23.7	11.2	16.4
Completely free	18.2	6.0	7.4
	100.0	100.0	100.0

Indian Systems of Medicine and Homoeopathy:

There are a total of 93 hospitals

System	Hospitals	Beds
Ayurveda	68	1077
Unani	11	202
Homeopathy	7	100
Nature Cure	3	26
Yoga	3	15
Siddha	1	10
Total	93	1430

Ayurveda Hospitals were 17 at district level and 3 were teaching hospitals. Many of these hospitals need improvement and renovation. The level of patient satisfaction is not high in most of them.

Hospital Administrator

The Hospital Administrator is the key executive of the hospital. It is the hospital administrator who largely determines how efficiently and effectively the hospital functions. Success or failure of the hospital depends to a great extent on the competence and other qualities of the hospital administrator.

It has been the general rule to appoint a senior clinician to be the Chief Executive of the hospital (Administrator / Director / Medical Superintendent). But being relatively untrained in management, he / she is unable to cope with the demands of management / administration (personnel, materials, financial, etc.) The net result has been that the **hospital has lost an excellent clinician but gained a poor administrator**, if he / she is appointed as a full-time administrator; or, **the hospital gets a poor administrator and the clinician performs below par** (being saddled with administration), if it is a part time or additional charge appointment.

The solution to the problem may be to appoint as hospital administrator

- a medically qualified person, who is also qualified or trained in hospital administration (there are many courses now available and many doctors to take up such courses); or
 - a non-medical person, who is qualified in hospital administration.
- As an interim measure, two alternatives are available to improve hospital administration:
- the clinician who is / will be appointed as hospital administrator to be given intensive short term training in administration (6 months?); or
 - the clinician / chief executive officer to be supported by a person qualified in hospital administration.

Many problems: Some solutions

A major factor affecting the efficiency and quality of care provided by the secondary and tertiary care hospitals in the government sector is the **mismatch** between requirements and the provision of buildings, number of beds, equipments, laboratory and other facilities on the one hand and the actual human (medical, dental, nursing, allied health professionals and support services) and material resources. Sometimes, these resources are less than the norms; sometimes they are more. Often there are differences in the quality. A study conducted by the Karnataka Health Systems Development Project on the situation in the 252 hospitals that were upgraded under the project (and KfW) has shown this mismatch to be very widely prevalent in almost all of them (Mismatch of staff in hospitals, Sept. 2000). The same is true of other hospitals also.

The reasons for the mismatch are very many.

- The availability of staff was not as per the norms for the provision of buildings, inpatient beds and other facilities.
- Positions were created but not filled up.
- Equipment was purchased but trained and qualified technical personnel not available. It could be the reverse also: trained personnel available but there was no equipment or the equipment was not in working order for every long periods.
- Equipment is available but consumables like chemicals, reagents and X-ray films not available.

It is essential to ensure better match. Planned efforts are needed to address these issues effectively to improve the performance quantitatively and, more importantly, qualitatively.

- **Limited resources: unlimited demands**

Financial and other resources are limited. But there are ever increasing demands. People are aware of the developments in diagnosis and therapy in the affluent parts of the world. Medical personnel trained in the use of sophisticated technology in those countries also demand the costly equipment, so that they could carry out such interventions here also. Ethical and other dilemmas occur in decision-making. Even when the equipment is purchased at high cost, the equipment may remain non-functional, if it needs maintenance or repairs and there is no one to set it working.

- **User fee**

User charges have been considered as one way of augmenting public financial resources in health care. This, however, can only be a very small proportion of the budget of the health care services. Another reason advanced is that, when a user of the services pays an amount, he/she will be in a position to demand better services.

One principle that should govern the collection of user charges in government health care services is that the charges so collected should be utilized for improvement of the services (non-salary component). Government of Karnataka, in its order in 1995, created District Development Committees to operate the user charges, with the Chief Executive Officer of the Zilla Panchayat as Chairman.

As on 1-2-2001, the total amount collected as user charges was about Rs.3.30crores, of which about Rs.1.12 crores were utilized for improving the services of the hospital.

Percentage of collection and utilization of user charges - Division wise
(KHSDP up to 22-01-2001)

Sl. No.	Division	No. of Hospitals	No. of Hospitals collecting user charges	Percentage of collection	No. of Hospitals utilizing User charges	Percentage of Utilisation
1	Bangalore	68	48	70.58%	21	43.7%
2	Mysore	71	50	70.42%	28	56%
3	Belgaum	67	22	32.8%	11	50%
4	Gulbarga	47	09	19%	05	55%

- **Ownership**

Among the problems facing the secondary and tertiary hospitals in improving patient care, the most important probably is the lack of a feeling of "ownership". There are probably many reasons for this. Frequent transfers of the staff can affect the attachment to the institution and building up a team.

All the staff of the Directorate of Health and Family Welfare Services must develop an attitude of ownership of the health care institutions and programmes. The training programmes must have the 'creation of ownership' and 'motivation' as important components.

There is also need for 'supervision' and 'facilitation'. The District Surgeons and the District Health Officers must help in this process. Functioning Hospital Boards can serve a useful purpose in improving the quality of care. The possibility of having a Chief Medical Officer or an Administrator to help in this process must be considered.

- **Contracting out**

There are many non-clinical areas in the health care institutions where contracting out may be beneficial. These include housekeeping, cleaning the hospitals and the premises and appointment of watchmen. But such contracting out must ensure that there is no exploitation of labour by the contractor. The laws of the land, like Minimum Wages Act, etc., must be followed by the contractor.

- **Needed: quality of care**

With about 38,000 hospital beds in the Government Sector and 40,900 beds in the private sector, the State will have a total of 88,900 beds for secondary and tertiary care (excluding the beds in Primary Health Centres). This represents about 1 bed for 614 people. This is ample. But the proportion of Government to Private Hospital beds is skewed. The Planning Commission recommendation is two-thirds in the Government Sector and one-third in the private sector. What is most needed is improvement in the quality of care.

General Practice Unit

At present, many patients with vague symptoms and requiring primary health care come to secondary care hospitals. They are directed to one specialist unit or another by a non-medical person. The patients go from one queue to another, wasting considerable time of themselves and of the specialists before a diagnosis is made and treatment given. One way out is to have only patients referred from a primary health centre (or equivalent unit) to be seen at the secondary care hospital. But this can cause inconvenience to patients from the neighbourhood of the secondary care hospital, unless there is a general practice unit at the secondary hospital. The general practice unit can work in the outpatient department, manage a large proportion of the patient and refer others to the specialists, who can then devote greater attention to these patients.

In the case of teaching hospitals, there is an added advantage if there is a general practice unit. The patients with the vague symptoms and requiring primary health care can be very useful for teaching / learning about the common types of patients met in the community.

Recommendations

- *Make the secondary and tertiary health care institution fully functional, with the required staff (avoiding mismatch) and equipment in good working condition.*
- *The emphasis must be on quality in addition to quantity. Quality assurance is needed.*
- *Appoint an expert committee to examine the needs of the State with respect to the specialities and their rational distribution in the districts and talukas, together with requirements of personnel, equipments, etc.*
- *Make the hospitals under the Indian Systems of Medicine and Homoeopathy function well. The proposal given by the Department may be considered. Standards for these hospitals must be worked out and implemented.*
- *Steps must be taken during training (in-service) programmes to inculcate the feeling of 'ownership' of the hospitals by the staff at every level.*
- *'Supervision' and 'facilitation' are needed.*
- *CHCs need the post of anaesthetists for the functioning of the Departments of Surgery and Obstetrics & Gynaecology.*
- *Secondary and Tertiary care hospitals must have Dharmashalas.*
- *Secondary and Tertiary Care Hospitals must have social workers (preferably volunteers) to help the patients.*
- *The equipments must be maintained in good working condition; the downtime must be reduced to the absolute minimum.*
- *One of the staff members (senior most office assistant?) may be designated as Hospital Manager, to work under the Administrative Medical Officer to look after non-technical matters.*
- *The Administrative Medical Officer must be trained in Hospital Administration.*

4.2 EMERGENCY HEALTH SERVICES

Emergency services provide immediate resuscitative, diagnostic and therapeutic care to persons with injuries by accidents or sudden attacks of illness or acute exacerbation of an existing disease. These persons require immediate attention. Time is the essence. Timely management can make all the difference between life and death.

Problems

There are many problems in providing immediate and adequate response. These include pre-hospital care system and in-hospital services.

Pre-hospital care system

It is essential that the management of persons who are subject to accidents or injury or acute illness start at the earliest. This calls for an **early access system**. Communication is most important. This includes transfer of information through telephone, wireless or other systems. There is need for dedicated **emergency ambulance services**, as opposed to the routine ambulance services.

The ambulance services must have fully trained and committed staff, which would include medical, nursing and paramedicals. Most often, trained paramedicals are the personnel available. Hence their training is most important.

Pre-hospital emergency care services require :

- commitment from the state and local health authorities to work together towards unified pre-hospital care services;
- cooperation from other departments and particularly the police;
- identifying the main problem (ambulance service) of pre - hospital emergency care;
- developing an easy and early access to Emergency Medical Services; ambulances , ambulance stations and receiving hospitals. It is essential to have a system of efficient maintenance of vehicles and equipment;
- drawing up and implementing systems of identifying various categories of sick and injured persons by trained paramedics, nurses and doctors;
- developing protocols to send patients to appropriate levels and types of hospitals.

Medical and nursing staff will accompany the emergency ambulances as required. The ambulances must have all the necessary equipments such as oxygen, infusion sets, fluids, appliances and accessories.

Categorisation of hospitals

The hospitals forming part of the network of emergency services must have the necessary standards of care. Hence the hospitals must be categorised depending upon availability of facilities. There is need for competent and dedicated personnel, with appropriate medical equipment (not necessarily sophisticated equipment, which may not work); the cost: benefit ratio must be worked out when purchasing equipment. The pre-hospital health care system must be able to refer the patients to the appropriate hospital, based on the facilities.

Care provided by emergency departments

These departments should be oriented to manage the persons requiring immediate treatments. They should not be 'traffic policemen', directing emergency patients to various inpatient departments. The staff of emergency departments must be capable of giving the treatment, calling the specialists as necessary. Once the patient is stabilised, the patient may be transferred to the respective departments for further definitive therapy.

Triage system

It is necessary to have sorting of patients, based on need for immediate attention, when there are more patients. We should have a practical triage system, with a rapid provisional assessment. This will lead to efficient and effective management.

We must minimize

- patient waiting and process time
- administrative activities of staff and patients ; and
- movement of patients and relatives (attendants).

Communication

The role of communication systems (apart from the ambulance services) must be emphasized. Electronic data communication must be in place to facilitate transfer of information

- from place of accident or emergency illness to ambulance, and
- from the ambulances to the receiving hospitals.

This will ensure that the hospitals are alerted early of the arrival of the patient and delay can be avoided. Use of the police department communication system will be useful. It can also help in networking available agencies and personnel.

Quality management

Hospitals must maintain performance standards. There can be many indices of performance:

1. **Operational Index:** Ability of the emergency department (hospital) to provide quality service. A part of it is patient turnaround rate - the average number of patients seen over an hour period.
2. **Service Index:** Personalised service to the patient. This can be assessed through patient satisfaction rating.
3. **Organisational Development:** This can be assessed by the degree of satisfaction of the staff.
4. **Clinical Quality:** This is based on outcome studies;
 - ability of the emergency department to manage patients well;
 - ability of the department to diagnose and admit accurately;
 - ability of the department to discharge the patient accurately; and
 - average length of stay of the patient.

Audit

An audit must be conducted periodically to assess the performance of the department. It must include a cost-benefit analysis and the mean cost per patient.

Training in Emergency Medicine and Trauma Care

Emergency Medicine is becoming a specialised discipline. It is necessary to train doctors, nurses and paramedics in Emergency Medicine and Trauma Care.

The goals of Emergency Medicine are the early and rapid diagnosis of medical and surgical emergencies (trauma and non-trauma) and early initiation of treatment in timely fashion. Such early intervention can minimise mortality and morbidity and help in the early return of the individual to a useful role in society cost-effectively. Academic Emergency Medicine and Trauma Care would include undergraduate and postgraduate training; a one-year advanced diploma programme could be considered.

Advanced postgraduate training will include the special areas of Emergency Trauma Care, Cardio-pulmonary Care, Toxicology, Pediatrics and Disaster Management.

Cardiopulmonary resuscitation

It is necessary to train as large a number of persons as possible in first aid and cardiopulmonary resuscitation. This is particularly important with respect to industries, transport personnel and others who are likely to be the first on injury spots. In addition, some persons can be trained in advanced trauma life support.

Trauma Management

This would include injuries of various kinds; there can be multiple injuries (polytrauma). They can be life-threatening conditions, which would necessitate primary survey and resuscitation. The first requirements are looking after airway, breathing and circulation (ABC). There may be dysfunction of the central nervous system.

Management of shock is important in tackling emergencies. Secondary survey will look into skull injury, spinal injury and injury to the chest, abdomen or limbs or the blood vessels.

Investigations are then carried out as necessary, following which definitive treatment will be started.

Trauma primarily affects the young, leading to loss of productivity.

Management of other emergencies

These would include management of medical emergencies

- unconscious patient
- acute myocardial infarction
- acute pulmonary oedema
- status asthmaticus
- anaphylaxis
- diabetic ketoacidosis
- hypoglycaemic coma
- status epilepticus
- cerebrovascular accidents

Emergency situations also arise in

- drowning
- hanging
- electric shock
- others.

Snake bites can cause deaths. Between 1993 and 1997, 3000-5000 outpatients were treated for snake bites every year; between 2000 and 4000 patients with Snake-bites were treated as inpatients and between 116 and 210 patients with snake-bites died, as per the bulletin of the Department of Health and Family Welfare Services(1997-1998). Prompt treatment with polyvalent anti-snake venom serum can save lives and reduce suffering.

Poisoning may be due to over dosage of drugs such as antidepressants or barbiturates. Carbon monoxide poisoning or poisoning with pesticides or insecticides (e.g., organophosphorus) can cause emergencies.

Obstetric emergencies can be caused by conditions such as eclampsia.

Paediatric emergencies may be due to seizures or other conditions.

Psychiatric emergencies can require management of aggressive and violent or suicidal patients.

Sanjay Gandhi Accident Hospital and Research Institute, Bangalore

This is an autonomous institution started in 1984, to treat victims of traffic accidents. It has been expanded and has been shifted to new premises, which can accommodate 125 beds. When the project is completed, there will be 250 beds and may further be expanded to 350 beds. The Institute has a certificate course in Traumatology; this is of one-year duration (after postgraduation).

Trauma Care Centre

The Karnataka Health Systems Development Project has identified 44 hospitals to be developed into Trauma Care Centres, spread throughout the State. These Centres will be situated near the National Highways and State Highways so that they can cater to the needs of road accidents and also provide easy access. Each of the Trauma Centres will have 10 beds. They are all supplied with the necessary equipments and furniture. Among

the equipments supplied are equipments and instruments for resuscitation, surgical procedures, conducting deliveries and gynaecological procedures, ophthalmic surgery, laboratory tests and other medical equipments and vehicles. There are also X-ray machines and operation theatre tables and operation lights, as also oxygen cylinders with trolleys.

Emergency Medicine and Trauma Care Centres

The Task Force considered the needs of the State and has suggested that the needs for Emergency Care and Trauma Care be combined and the Centres be designated as Emergency Medicine and Trauma Care Centres. There will be 44 such centres to start with. These will gradually be expanded to include other larger hospitals (with more than 50 beds) and distributed such that they will be at distances of 50-60km and the time taken to reach them will be 1 hour or less. Other necessary equipment will be supplied. The centres will be staffed with trained personnel. A good communication system including telephone and wireless facilities and well-equipped ambulance services with trained staff will be developed.

Recommendations

- *Develop Emergency Medicine and Trauma Care Centres to provide comprehensive medical care, including medical, surgical, obstetric, paediatric and trauma care. To start with there will be 44 such centres developed by the Karnataka Health Systems Development Project. This will be expanded gradually to include more hospitals, spread throughout the State*
- *Each centre will have 10 beds for emergency medicine and trauma care.*
- *The Centres will have trained personnel, all necessary drugs, sera, equipment and furniture.*
- *A good and working communication system will be developed. This will include telephone facilities and wireless sets. Well-equipped ambulance services with trained personnel will be provided*
- *Training will be imparted to the personnel, doctors, nurses and paramedics, in first aid and life and trauma support systems.*
- *The help of the police will be taken to ensure early and easy communication.*
- *A system of community insurance will be developed.*
- *Helmet wearing should be made compulsory for two wheeler users (including pillion riders). Seat belts should be worn while driving cars.*
- *First aid training should be mandatory to drivers and conductors of buses, trucks and other vehicles. These vehicles will carry functional first aid boxes.*
- *General public, especially those working in factories and children and teachers in schools must have training in first aid. The services of St. Johns Ambulance Association may be availed of.*
- *The Additional Director, Medical, will be the Chief Nodal Officer for coordinating all work with respect to Emergency Medicine and Trauma Care.*

4.3 DIAGNOSTIC SERVICES

Introduction

Modern health care and Public health depend heavily on **evidence**. In health care the diagnosis must be evidence based, and therapy chosen on the basis of previous evidence. In public health, intervention is directed against specific causes of diseases and the transmission pathways of specific pathogens. Much of the diagnostic evidence, both in health care and public health, comes from laboratory investigations.

Both the public and health care workers are familiar with the dependence on tests in the management of cardiovascular, renal, nervous system or liver diseases. However the basic need for diagnostic tests in the more common infectious diseases is not sufficiently acknowledged by the medical profession nor understood by the public. This is partly due to the lack of reliable or adequate laboratory diagnostic services at all levels and partly due to the availability of a wide range of antimicrobial drugs which are used without specific aetiological diagnosis. The consequences of treating without specific evidence may have serious repercussions on human life. For example, if a treatable bacterial infection of the central nervous system is clinically misdiagnosed as Japanese Encephalitis (without laboratory investigations for bacterial aetiology), the likely outcome is death or permanent disabling sequelae. In the case of bacterial diseases there is need to have, in at least a proportion of cases in an outbreak, the identification of specific pathogens and their antimicrobial sensitivity patterns. In the absence of such laboratory evidence the choice of antimicrobials may be inappropriate. Moreover many non bacterial diseases may be treated with antimicrobials. Such commonplace practice of treatment with a number of antimicrobials has led to the emergence of antimicrobial resistance among a large number of bacterial pathogens. To cite a few examples, today bacterial meningitis may be due to microbes resistant to Penicillin and Chloramphenicol which were the mainstay of treatment until recently. Similarly many cases of Typhoid fever are no longer amenable to the recommended drugs of choice (Chloramphenicol, Ampicillin or Co-Trimoxazole). Consequently the newer Fluroquinolones have become standard treatment in many centers in India. Recently several investigators have reported Typhoid fever resistant to even these newer drugs. Third generation Cephalosporins, which may be needed to treat Typhoid fever, are very expensive and not afforded by the common man who is in the first place at risk of disease. A concerted effort, not only to prevent Typhoid fever, but also to introduce and sustain rational therapy to restore some of the lost ground, is urgently needed.

The importance of diagnostic evidence in public health programmes against specific diseases (example TB, malaria, leprosy) must be appreciated. Even for other public health problems (e.g., Cholera, Typhoid, Dengue, JE, Leptospirosis, etc) specific aetiological diagnosis of at least a sample during an outbreak is essential for mounting rational and targeted interventions. Thus the public health system must also have ready access to diagnostic laboratory services.

The diagnostic services for health care include clinical pathology, biochemistry, histopathology, microbiology (including bacteriology, virology and mycology), serology, imaging (X-ray, ultrasonography, echocardiography, CAT scan, MRI scan), electronic diagnostics (electrocardiography, electroencephalography, nerve conduction etc.), endoscopies, nuclear medicine and molecular medicine. It is important to define the appropriate tests for the different levels of primary and referral health care institutions.

The laboratory services for public health include many of the above diagnostic modalities and microbiology of water and food, toxicology, and medical entomology.

Laboratory Services – Situation analysis

There are Diagnostic Laboratories attached to PHC, CHC, taluka hospitals, district hospitals, teaching hospitals and speciality hospitals. In the public health system there are district health laboratories and the Public Health Institute (with sections for diagnostic microbiology, bacterial analysis of water, testing of IV fluids, pesticide examination, chemical examination and food and water analysis). The laboratory of the Divisional Public Analyst cum Regional Assistant Chemical Examiner is also in the Public Health Institute.

There are laboratories at district and State level dedicated to malaria (laboratory attached to Deputy Director of Malaria in every division, Central Malaria Laboratory, Bangalore), filariasis (laboratory of Filaria Eradication Programme), leprosy (laboratory attached to District Leprosy Officer and Central Leprosy Laboratory, Bangalore), tuberculosis (laboratory of the District TB officer, laboratories of District TB Sanatoria, Central TB Laboratory at Lady Wellington Hospital, Bangalore), sexually transmitted diseases (STD laboratory of District hospitals, Central VDRL Laboratory at Bhatkal) and guinea worm (Central Guinea Worm Laboratory). In addition there are laboratories at the Vaccine institutes at Belgaum and Shimoga.

Under the Revised National TB Control Programme centralized sputum smear laboratories are planned to serve clusters of primary health care institutions. Under the Karnataka State AIDS Control programme, HIV testing facilities have been established in several centers.

There are 2 laboratories for virology in the public sector. One is in Bangalore Medical College, manned and maintained by the Indian Council of Medical Research and the second is in NIMHANS (deemed university).

Thus Karnataka State has a total of about 2000 laboratories. However most of them are beset with chronic problems such as poor supervision, inadequate equipment, reagents, personnel and budget provision. These laboratories must be made fully functional, efficient and with quality management. The State also needs to examine how best to integrate all the laboratories under two umbrella systems, namely diagnostic service for health care and laboratory services for public health.

Essential diagnostic services for health care delivery

The following tables will provide the lists of investigations, equipment and personnel essential for various levels of health care system. At the district level, the district hospital laboratory and the district public health laboratory may be integrated into one District Health Laboratory. The dedicated laboratories for TB, leprosy, STD etc must be integrated with the District Health Laboratory.

Table 4.3.1 : Primary Health Centre (PHC)

Sl.No.	Tests	Equipment and reagents	Personnel
1	Urine analysis	Microscope, Centrifuge, Slides, test tubes and other glass ware, Stains, reagents for serology, Test kits for pregnancy	Lab Technician – 1*
2	Stool examination		
3	Clinical haematology TC, DC, ESR, Hb, BT, CT		
4	Blood smear examination for Malaria & Filaria		
5	Sputum for Acid Fast Bacilli		
6	Microbiology: Hanging drop, smear examination		
7	Pregnancy Tests		
8	Serology: Widal, VDRL		
9	Skin smear for lepra bacilli		

* There should be provision for replacement of lab technician during leave vacancy.

Table 4.3.2: Secondary Health Care – CHC / Taluka hospitals

Sl.No.	Tests	Equipment and reagents	Personnel
1.	All the tests mentioned under PHC	All equipment mentioned under PHC, Colorimeter with its kits, Relevant Kits, Incubators, Culture media, Antibiotic discs, ELISA equipment and kits	Lab. Technicians-2 Doctor with DCP qualification*
2.	Bio-chemical Tests: for glucose,		
3.	Blood grouping / Cross matching		
4.	Tests for HIV / HBsAg		
5.	Microbiology:		
6.	Imaging and miscellaneous. X ray, ultrasonography, ECG	X ray unit, ultrasound equipment.	X-ray technician, ultrasonologist**

* Selected taluka hospitals or CHC to have an additional technician to cover leave vacancy at PHC. Similarly selected taluka hospital or CHC to have one DCP to supervise several PHC laboratories,

** in house or visiting

Table 4.3.3: District Hospital

Sl.No	Tests	Equipment and reagents	Personnel
1.	All tests mentioned for Taluka Hospitals	All equipment and reagents mentioned at under taluka hospitals, Various kits and reagents, Autoanalyser incubators	Technicians - 6
2.	Complete Biochemical / Haematological examination		Biochemistry: M.Sc/MD/PhD
3.	Microbiology, culture / sensitivity		Pathology: MD
4.	Histopathology; used as reference lab from taluk hospital paraffin slides.	Histopathology laboratory equipment, Microtome and other facilities for making	Microbiology: MD/PhD
5.	Bacterial and chemical analysis of water, isolation of vibrio cholera, salmonella etc.,		
6.	Imaging and miscellaneous: X-ray, ultrasound scanning Endoscopy, ECG, access to CAT scan/ MRI scan	X-ray machine, portable x-ray, Portable ultrasound scanner, Endoscopes, ECG	X-ray technician, Radiologist, Ultrasonologist, Visiting endoscopist or private participation

Table 4.3.4 : Tertiary Care Hospital, Medical College Hospital, Speciality Hospital

All tests, equipment and reagents described under Table 3 must be available.

1.	All relevant haematological, biochemical and microbiological tests.	Relevant instruments and equipments	Technicians. Departments of Pathology, Microbiology, Biochemistry
2.	Immuno Histopathology		Department of Imaging Nuclear Medicine
	Imaging and miscellaneous		
	X-ray, ultrasound, Echo Cardiography, CT Scan, MRI, Angiography depending on the specialty hospital		
	Miscellaneous		
	Endoscopy, Bronchoscopy, Hysteroscopy, Nuclear Medicine in addition to all tests at district level.		

Specialised laboratory facilities

Access should be available in the state for several modern diagnostic facilities, e.g., there should be at least one Electron Microscope centre with access of service to pathologists at different levels. Similarly, as need arises molecular methods must also be made available appropriately. For example the antiviral treatment of AIDS requires monitoring of virus RNA copy numbers in blood. The correct diagnosis of Hepatitis C virus and Cytomegalovirus in organ transplant recipients requires facilities for Polymerase Chain Reaction (PCR). The health service must establish a mechanism for needs assessment for these specialized laboratory facilities and they should be provided at State or regional levels.

The Karnataka government has proposed to create Regional Diagnostic Centres in 5 regions, with Central government grants. Once these laboratories are established, they may provide access to the specialised services listed above.

Diagnostic Laboratory services at other hospitals.

Every hospital, governmental or private, with inpatient admission facilities must have a functional diagnostic laboratory. The range of laboratory tests available in such laboratories would depend on the expertise at the hospital and the facilities, such as equipments. Manuals must be available, appropriate for the laboratories at various levels.

Quality Control and accreditation

Quality Management in diagnostic services is extremely important for accuracy and reliability of diagnostic tests. Total Quality Management includes internal quality control (IQC) and external quality assessment (EQA). All laboratories must be provided with detailed laboratory manuals, which should contain specific IQC procedures. Currently there are two national EQA schemes, one for clinical biochemistry and one for clinical microbiology. The State must make use of these, to begin with for key laboratories, and later establish (within 5 years) appropriate EQA system to ensure participation by all CHC, Taluka hospitals and District Health Laboratories.

A laboratory accreditation system must be established and made functional by the year 2005.

Supervision and administrative support

Laboratories tend to deteriorate unless supervised adequately and supported administratively. Therefore it is important to establish a management system for supervisory control and administrative support for all the laboratories within the health system in the State. A cluster of PHC laboratories must have a supervisor with DCP qualification. The CHC and taluka hospital laboratories must have supervisory support from the district health laboratories. All district health laboratories must have supervisory support by a central health laboratory.

All vertical laboratory facilities at the district level and above must be integrated. Thus the District Health Laboratory will encompass the District Hospital Diagnostic Laboratory, District Public Health Laboratory and all other district laboratories such as those for TB, STD, leprosy, malaria etc. The District Health Laboratory must have a medical entomology laboratory for dissection and species identification of larvae and mosquitoes, and for testing insecticide resistance of vectors.

The administrative lines of control of the laboratory network must be defined by the health system. An assessment for the required personnel and cadres (to man and supervise laboratories at all levels) must be prepared before the end of 2001. This will help in the planning of preparing and training, with the necessary qualifications of an adequate numbers of personnel, with defined promotion avenues, within the health systems. The Public Health Institute must be modernised to function as the technical apical lead centre for the laboratory system and network within the state.

Recommendations

- *All diagnostic service laboratories must be strengthened or restructured as shown above and all vacancies should be filled up and equipment and reagents provided in a time bound fashion so that the entire system is fully functional before the end of 2005.*
- *The Public Health Institute must be redesigned and strengthened to encompass Epidemiology and laboratory components. This State Level Laboratory should have expertise in Bacteriology, Virology, Mycology, Parasitology, Medical Entomology and Toxicology. Its functions include Supervision, Training, Quality Management, Reagent preparation and Standardisation.*
- *The District Hospital Laboratory and the District Health Laboratory will be integrated; the District Laboratory will fulfill both functions – diagnostic service for health care, and for public health. The District Laboratory should be supervised by one MD / DCP (Microbiology) and MD / MSc (Biochemistry) and one MD / DCP (Pathology), and adequate respective staff, technical and administrative. The Taluk Hospital Laboratory should be supervised by one specialist of DCP qualification, supported by other staff. CHC and PHC laboratories will be managed by Trained Technicians.*
- *The personnel requirements, their training needs, cadres and promotion avenues for all laboratories must be prepared before the end of 2001.*
- *The quality management procedures with provision of laboratory manuals including IQC must be initiated immediately. The participation of all relevant laboratories in EQA and appropriate accreditation process must be completed by the year 2005.*
- *Imaging and miscellaneous investigative services will be provided to meet the requirements for diagnostic tests at various levels.*

4.4 BLOOD BANKING AND TRANSFUSION SERVICES

Preamble

Ensuring availability of safe blood and blood components to all persons who need them, irrespective of socio-economic status is the responsibility of the government of Karnataka

Back-ground of the Blood Transfusion Services in Karnataka

Blood banks in Karnataka come under the regulatory control of the Drug Control Department, Karnataka.

The other stakeholders are:

- Blood Banks; Hospitals, Patients and the medical community; Voluntary blood donors, motivators & donor organisations;
- Advisory & Policy bodies such as Karnataka State Blood Transfusion Council Karnataka, State AIDS Prevention Society; Dept. of Health & Family Welfare, Karnataka, Rajiv Gandhi University etc.
- Accreditation bodies such as National Institute of Biologicals, other International Quality Assessment agencies like ISO.

Existing facilities- Strengths:

- There are several NGOs, supporting voluntary blood donation, whose networking and strengthening can lead to increased voluntary blood donations and donor base.
- Under NACO (National Aids Control Organization) phase I & II, the Blood Safety Programme was given priority and several Government and NGO blood banks were strengthened.
- Presently there are 110 licensed blood banks, 75% are government and private hospital- based blood banks; 25% equally divided between private non-profit, and private commercial blood banks.
- Of the 7 component separation centers, KMIO, NIMHANS, Victoria Hospital (yet to be fully commissioned), St. John's Hospital, Manipal Hospital and Rotary-TTK Blood Bank are in Bangalore; one in Mangalore -University Medical Centre. Two more have been sanctioned this year under Karnataka State AIDS Prevention Society (KSAPS) and 2 more are on the anvil for 2001-2002.
- There is sufficient technical expertise available for training of medical and para - medical staff.

Areas of concern in the present blood banking and transfusion services:

- Inequitable distribution of blood bank services. Bangalore, for instance, has 40 blood banks, whereas many districts have only one.
- The existing system is not able to cater to the needs at the periphery. In remote areas far away from existing licenced blood banks, emergency requirements at smallest hospitals and nursing homes are being met by drawing blood from the relatives and screening for Transfusion Transmitted Diseases (TTD) by rapid tests.
- There is sub-optimal and irrational use of blood for two reasons. Firstly because most blood banks supply Whole Blood only, and secondly, there is lack of awareness about optimal and rational use of blood by the medical community. A recent study revealed that as much as 72% of adult transfusions and 49% of child transfusions were inappropriate. Upto 50% of all blood collected was wasted as unnecessary, One-unit Transfusions.

- All Blood banks are linked (on paper) to the 10 Zonal Blood Testing Centers. These centres were established during Phase -1 of the HIV/AIDS Control programme to screen samples from all blood banks for HIV. But sub- standard, poor quality testing, delay in testing and reporting at the ZBTCs have resulted in all blood banks carrying out screening at their own centres.
- Many blood banks do not meet required quality standards, including many of the ZBTCs;
- Many small blood banks are economically un-viable.
- Most blood banks have inadequate infrastructure:
 - a. The blood banks have the required equipment but no provision for maintenance and repair
 - b. Many blood banks are manned by Medical Officers without training in blood banking. Many of them are postgraduates in subjects other than Pathology e.g. OBG, surgery, orthopaedics etc.; therefore their interest in blood banking is limited, if not absent.
 - c. The other staffing requirements e.g. technicians are not adequate.
 - d. There is no social worker in most blood banks.
 - e. The staff is not trained in blood banking.
- Most private commercial blood banks continue to draw blood from paid donors, who come in the guise of 'Replacement donors'.

Improving the blood banking and transfusion services in Karnataka will entail:

I. A data base of blood requirement and available facilities

A GIS with details of a needs-based assessment as well as available resources detailing the following:

- Hospitals and blood requirement;
- Blood banks; trained personnel, trainers / training institutions;
- NGO, community groups, College and industries- as a source of Voluntary blood donors

II. Upgradation of identified blood banks and centralization of some of the services:

The critical service of TTD screening should be carried out only at identified Blood Centres and ZBTCs that meet required standards to ensure quality and economic viability.

Screening for blood safety could be combined with tests performed for other requirements, example Voluntary Testing, Diagnostic, Sentinel Surveys and so on. The kits used, criteria for testing, procedures etc. will certainly differ. But capital and (trained) staff will be common.

Small, economically unviable blood banks lead to massive & unnecessary drain of monetary as well as human resources. Therefore, facilities like component separation and testing for TTD should be centralized and tested blood components stored and issued at peripheral level hospitals.

The medical facilities available in Karnataka in the hospitals at various levels are known. It is easy to identify and classify the specific blood / blood components requirements at each level. On the basis of this, a needs-based, 3-tier system of blood centres of excellence can be established.

First tier: Blood Component Separation Centre (BCSC), based preferably in a teaching hospital. This should:

- Collect and process at least 1,000 units of blood per month and issue 2-3000 units a month
- Test for TTDs by ELISA,
- Process Whole Blood into components,
- Store and issue components to patients after pre-transfusion tests, and
- Supply blood components to district and taluka blood banks.
- At least 3 Zonal Blood Component Separation Centres, 1 per zone, should be established in teaching hospitals (except in Bangalore, which already has 5 centres).

Second tier -district blood bank, large taluka hospital or equivalent. This should:

- Collect at least 500 units of blood per month,
- Test for TTDs by ELISA,
- Retain single bags (WB) and send multiple bags to BCSC for component preparation,
- Store and issue components to patients after pre-transfusion tests

Third Tier : (Smaller taluka hospitals, CHC or equivalent), **storage and issue centre.** This should:

- Store and issue WB / RC supplied by the designated district blood bank or BCSC, to patients
- Collect WB from patients' relatives in emergencies, test by rapid tests for TTDs and issue to patients.

III. Evaluation and accreditation of blood banks to ensure quality:

Quality systems in all blood banks and blood transfusion centres and regular monitoring and evaluation by Drug control department and External Quality Assessment agencies.

IV. Increasing voluntary donation and retention of donors:

Blood from a voluntary donor is the basis for ensuring safe blood supply. Therefore:

- Efforts should be made at all three (tiers) levels to motivate and collect volunteer blood.
- Every blood collection centre should have a social worker/motivator. Social Workers should start motivation and mobilisation of donors, with the help of local NGOs and the community to establish a system to ensure availability of blood throughout the year. The social worker should be made responsible for coordinating the voluntary blood donation movement in the district.
- The voluntary and private sector support for voluntary blood donation, and should be utilized to the maximum extent possible. This should be reciprocated by ensuring blood availability when required by the donor or donor organisation.

V. Ensuring rational and optimum use of blood

Blood is a very precious commodity. Therefore along with efforts to increase voluntary blood donation, equal emphasis should be laid on rational use to avoid wastage of blood and blood component therapy to optimise use of blood available.

- Both the medical community as well as the end user -the patient, should be sensitised about this.
- Every hospital should have a **Hospital Transfusion Committee**, to audit blood use.

VI. Education, training and cadre development in the above areas:

The Rajiv Gandhi University of Medical Sciences should institute the following:

- Include the subjects of Blood Banking, Transfusion Medicine, correct, rational and optimum use of blood in the MBBS and all post graduate courses, and a posting in a blood bank during internship. A degree / diploma course in transfusion medicine for medical officers (?).
- Systematic training for blood bank Medical Officers, laboratory technicians, nurses, QC officers and motivators; all personnel at the storage and issue points and drug control inspectors, should be implemented.
- Support with preparation of SOPs, IEC material etc.
- Research programs initiated and supported in relevant areas.

VII. Re-examination of and recommendations for The Drug Control Act and Rules:

The Drug Control Act and rules may need to be re examined to cater to emergency blood requirement at remote areas because:

- The setting up of an effective centralized blood banking and transfusion services as per the above plan, including logistics of transport of blood / components to all storage and issue points (hospitals) will take considerable time.
- Even then the system may not be able to meet the total requirement for blood and blood components at all levels and especially not the emergency requirement at remote (PHC) level hospitals.

Recommendations**General:**

- *All blood banks should have the required equipment, and be supplied with adequate reagents and testing kits in a timely manner. They should be equipped with adequate number of trained staff.*
- *All blood banks should put in place a quality control and assurance programme.*
- *NGOs have taken a proactive role in the voluntary blood donation movement. A comprehensive plan to motivate and mobilize voluntary blood donors to ensure adequate supply of safe blood throughout the year and all over the state should be developed with their help.*
- *The medical community should be sensitised to make optimal and rational use of blood. Every hospital should have a blood transfusion committee to ensure this.*

Recommendations for Urban Health Care Services:

- *Smaller, nonviable blood banks should be closed; the infrastructure facilities (both equipment and staff) redistributed into a rationalised & centralized blood banking and transfusion services.*
- *A pilot project to study the logistics, management and monitoring of the centralized 3-tier system comprising – “Blood Component Centre- blood collection -blood storage and issue points” as elaborated earlier, should be initiated in Bangalore; and this model replicated later in other major cities.*

Recommendations for Rural Health Care Services:

- *It will not be feasible to establish an Urban model of 3-tier centralized blood banking and transfusion services for the Rural areas for some time to come. Therefore an adequate number of*

well-equipped (Whole Blood) blood banks will have to be set up, keeping the blood needs and regional disparities in mind.

- Since the numbers of blood units processed at the peripheral blood banks may be small, measures to conserve resources may be undertaken by using common testing facilities and staff of the hospital.
- The Drug Control Act & Rules need to be seriously examined and modified to cater to emergency blood requirements, particularly in remote areas. The State Government may make specific recommendations to this effect.

4.5. BIO-SAFETY

There is constant danger to patients and staff in the hospital, unless precautions are taken. These may be from radiation during diagnostic procedures (X-rays and nuclear medicine) or from infections. Radiotherapy is used in specialized institutions. Health care workers, patients and public are at the risk of exposure to radiations from both diagnostic & therapeutic procedures using radiation, but radiotherapy is available only in specialised institutions.

4.5.1 Radiation Safety in Diagnostic Services:

1. Patients Protection in Diagnostic Radiology:

Aims:

- a. Reduce the absorbed doses received by tissues in the region of the body under examination to the minimum compatible with obtaining the necessary information for the particular patient.
- b. Limit as far as is practicable the irradiation of other parts of the body.
- c. Reduce the frequency of unnecessary repeat irradiation.

The above points are highly dependent on technical factors such as

- a. Size of the X-ray field.
- b. Shielding of the organs
- c. Distance from the focal spot to the skin or image receptor (*Mobile*: Distance Should not be less than 30 cms; *Stationary*: Distance should not be less than 45cms; *Photofluorography* and *Radiography* of the chest: at least 120 cms.); (Table Top Dose: should not exceed 5.75 R/minute)
- d. Total Filtration: Conventional Diagnostic Radiology: not less than 2.5 mm of aluminium
- e. Carbon Fibre Materials: Overall reduction of absorbed dose in the skin of the patient facing the X-ray tube is in the range of 30% to more than 50%.
- f. Control of irradiation and Recording of Irradiation time (in case of Fluoroscopy examination)
- g. Intensifying screens and Radiographic films
- h. Radiographic film processing
- i. Error in positioning of the patient, proper use of reference list of technical factors such as KVP and mAs based on patient size.
- j. Patient Record Maintenance
- k. Elective radiological examination of females lower abdomen and pelvis of woman in the reproductive age should be carried out preferably within first 10 days from the onset of menstruation. For pregnant woman, the foetus should receive minimum radiation dose.

2. Radiation Protection Programme

- a. Function of RSO: Conduct periodical protection surveys, competent to face radiation emergencies and accidents, to ensure maintenance and calibration of radiation measuring and monitoring instrument, maintenance of records.
- b. Personnel monitoring service
- c. Storage of Radiation sensitive materials
- d. Quality Assurance of the Equipment
- e. Maximum Permissible Dose Limit

Radiation Worker : 20mSv/year or not more than 100mSv in 5 years

Public : 1mSv/year

Pregnant Worker : Once the pregnancy of radiation worker is established, she shall not receive more than 10mSv at a uniform rate during the remaining period of pregnancy

3. Safety Gadgets on Diagnostic Radiology:

- a. Protective Lead Glass: 2mm lead equivalent thickness for 100kV for higher voltages increased at the rate of 0.01mm per kV
- b. Lead Rubber Flaps: Not less than 0.5mm lead equivalence
- c. Protective Barrier: 1.5mm lead equivalence thickness and 1.5mm lead equivalence window
- d. Fluoroscopy Chair: 1.5mm lead equivalence
- e. Protective Aprons: 0.25mm lead equivalence
- f. Protective Gloves: 0.25mm lead equivalence
- g. Gonad Shield: 0.5mm lead equivalence
- h. Cassette Pass Box: 2mm lead equivalence

4. Regulatory Controls:

- a. Equipment Design Certification
- b. Registration of X-ray equipment
- c. Records for Inspection / Decommissioning
- d. Stipulated Minimum qualifications and experience required for personnel
- e. *X-ray room layout:*
 - (i) Location of X-ray installation: As far away from high occupancy areas, as possible
 - (ii) Room size: Not less than 25 sq.m
 - (iii) Shielding: Dose equivalent limit to radiation worker and public should not 20mSv and 1mSv.
 - (iv) Opening and Ventilation: above a height of 2 meters from the ground or floor level
 - (v) Illumination Control: Suitable red light must be provided in the room after dark adaption.
 - (vi) Patient waiting areas: Outside the X-ray room
 - (vii) Warning Signal and Placard: Red light must be provided at a conspicuous place outside the X-ray room and kept on when the X-ray unit is in use.

5. Present Scenario: Status of Radiation Safety

Karnataka specific data regarding the number of units in use and safety precautions taken are not available. Currently more than 50,000 units are used in India. Nearly 1500 new units are added annually (1990).

- a. 44% of the fluoroscopic units had tabletop dose rates in excess of the recommended limits.
- b. On a more extensive survey of 750 units, it was found that one of three units had improper tube-screen alignment. The beam limiting was inadequate in 25% of units. Appropriate protective accessories were not in use in 20% of installations.
- c. Beam alignment, Anode potential, and linearity of mA were not found proper in most of the equipments.
- d. Lay out of X-ray installations and display of red lights and caution note were found unsatisfactory in most of the X-ray units.
- e. Training of Staff and availability of Personnel monitoring service were inadequate.
- f. QA tests and Protection surveys should be made compulsory for all X-ray installation at least once a year.

Recommendations

- *All the X-ray installations must be registered with AERB.*
- *All personnel handling the equipments must be qualified / trained / certified.*
- *Services of Radiation Safety Officer must be utilised by all the institutions, which are using X-ray equipments.*
- *All diagnostic X-ray equipment users should possess and use radiation safety gadgets.*
- *Radiation Protection programmes must be strictly followed by the X-ray equipment users.*

4.5.2. Hospital Acquired (Nosocomial) infections:

Hospital Acquired (Nosocomial) infection is a source of danger to the patients admitted in the hospital and to the staff working in the hospital. All personnel in the hospital must take adequate measures to prevent spread of infection.

Universal Precautions

Health care workers are constantly at risk of infection as they are exposed to any number of potentially infectious agents (blood and body fluids), in the course of their work. Patients at health care settings are also at risk of acquiring new infections (nosocomial or hospital acquired infections).

The level of risk of exposure to infections depends on the type of exposure and can be due to injury (cuts, needle-stick) or mucous-membrane contact (eyes, nose and mouth by splashing of blood etc or with skin abrasions). It is therefore very essential that safe working practices are instituted and maintained in the health care settings to reduce the risk of occupational exposure of staff to infections and of the patients to hospital acquired infections.

Guidelines for routine "Universal Precautions" and Bio-safety measures are available from WHO, NACO and other sources. Health Care Staff are also aware and concerned about occupational exposure and the safety precautions to be taken.

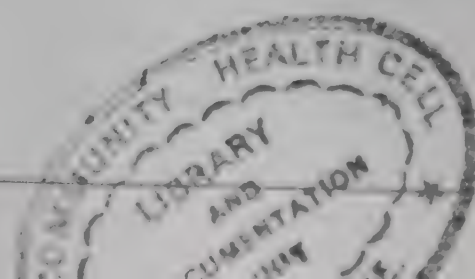
But unfortunately these are neither strictly enforced nor followed. Some glaring examples are:

- Re-use of needles and syringes without proper sterilization – E.g., use of one common sterilizer with no way of identifying the sterilized from the used needles and syringes.
- Gloves not being used for a variety of reasons that range from non-availability to discomfort because of hot weather. Once worn, gloves are not removed when touching door- knobs, telephones, books, pens etc, thereby posing a hazard to the next user.
- Transport and storage of specimens and samples; cleaning of spills etc, are not according to prescribed guidelines.
- The simplest of precautions viz. hand-washing is not practiced regularly and correctly.
- Eatables and drinks are allowed in laboratories and other quarantined areas and are often stored in refrigerators along with drugs, reagents, testing kits, vaccines etc.
- Often, the unskilled workers are not sensitized to bio-safety precautions.
- There are areas of concern in disposal of biohazard waste. Segregation at point of origin may be practised, but often there is mixing of the various types of waste at the end points; rag pickers are constantly at risk from sharps; plastics are incinerated leading to pollution and so on.
- Not all health care personnel are immunised against Hepatitis B; Post-Exposure Prophylaxis procedures are not followed according to guidelines.

Recommendations

- *All health care workers should be given systematic training programmes regarding the risks and precautionary measures to be taken to prevent infections which may be transmitted through blood and body fluids.*
- *Adequate consumables for barrier protection like aprons, masks and gloves should be provided to staff.*
- *All health care workers who are at potential risk for infections which may be transmitted through blood and body fluids should be immunized against Hepatitis B.*
- *Adequate measures for regular and periodic disinfection of the health care premises, work tables, equipment etc should be instituted.*
- *Minimum standards of cleanliness and tidiness should be instituted.*
- *All bio-hazardous waste should be segregated and disinfected before disposal.*
- *Post-Exposure Prophylaxis procedures should be followed according to guidelines.*

PHC-100



5. PUBLIC HEALTH

"Improvement in health is likely to come, in the future as in the past, from modification of the conditions which lead to disease, rather than from intervention into the mechanisms of disease after it has occurred."

- Thomas Mckeown, 1976

5.1 PUBLIC HEALTH AND PRIMARY HEALTH CARE : A CONTINUUM AND SYNERGY

The Task Force on Health and Family Welfare is specifically mandated to improve Public Health and Primary Health Care in the State. This was because public health, though strong in the state from the 1930s to 1960s, had subsequently gradually declined and got fragmented. The Task Force found through discussions with a variety of people over the past year, that most people had very divergent views on what exactly public health meant. Hence this section is an introduction to the entire chapter on public health, describing briefly public health concepts, principles and practice as they have developed over time, and linking them with the situation in Karnataka, India and elsewhere.

Defining Public Health

Public health is an evolving discipline through which major health gains for populations have been made in several countries around the world, since the early nineteenth century, i.e., before the development of antibiotics and vaccines. It has been defined by the Association of Epidemiologists as follows :

"Public health is one of the efforts organized by society to protect, promote and restore people's health. It is the combination of services, skills and beliefs that are directed to the maintenance and improvement of the health of all people through collective or social actions. The programs, services and institutions involved emphasize the prevention of disease and the health needs of the population as a whole. Public health activities change with changing technology and social values, but the goals remain the same: to reduce the amount of disease, premature death and disease produced discomfort and disability in the population" (JM Last 1983).

In clinical or curative medicine, efforts are focussed on the individual person who is ill. In public health, a population based approach is taken, focussing on disease patterns, distributions, trends and risk factors. Public health interventions are organized usually through government as larger collective action is required. The scope is wide and includes health protection, promotion, diseases prevention, cure and rehabilitation.

State responsibility for health and health care

One of the key principles of public health, that the State is responsible for the health of its people, was conceived over 150 years ago, leading to the first Public Health Act of 1848. The importance of this social principle remains and has been reiterated by several bodies such as the World Health Assembly, of the WHO (1977), WHO and UNICEF in 1978 and more recently by the Peoples Health Assembly (PHA) in 2000. The role of the state remains critical, in present times and for the future, to protect and promote the health of all people as a public good or common good, where health is a human right. Public health has in particular an

abiding concern for the health and social conditions of the poor and vulnerable sections of society. The state is also the only constitutionally, legally, mandated sector with the responsibility of improving the health and living conditions of its citizens.

Public health has consistently struggled with and challenged structural roots underlying poverty. The *political economy dimensions of health and people's access to care* include the strong underlying forces influencing the development, functioning and programme implementation of the health system. This is evident in strong medical professional lobbies, and vested interests of various groups of allied health professionals, both of which result in an unhealthy politicization of the health system and in non-implementation of programmes. It is also evident in pesticide, pharmaceutical, medical industry and insurance lobbies functioning at global and national levels and influencing local policies and practices. Class, caste/ethnicity, gender, age all play a role. The unfettered play of political economy factors results in increased inequalities in health status and in access to care. Public health emphasises the critical role required to be played by the state in shifting the balance towards better health and access to care for all, but particularly the poor and socially disadvantaged.

Addressing determinants of health

Diseases like cholera and typhoid earlier widely prevalent in Europe and the USA, were controlled by *public health systems that ensured a mandated supply of clean, safe or potable water, functioning sewage systems, garbage and refuse disposal*. Karnataka has initiated measures for water supply and sanitation through different projects namely the Dutch assisted project, DANIDA, UNICEF and the World Bank assisted Karnataka Integrated Rural Water Supply and Environmental Sanitation Projects. However the need and demands of the public in this regard are yet to be fully met. Water and sanitation related diseases still take a heavy toll in terms of sickness (see section on communicable diseases) and person days of work lost. The role of the Directorate of Health and Family Welfare Services will be in setting standards for water quality, use of chlorination / other methods of water purification, monitoring through regular water quality testing at local, taluk and district levels, and initiating quick containment measures following any disease outbreak. Related measures include intersectoral collaboration at different levels; health promotion of children, women and the community, and special training of panchayatraj members, as water and sanitation fall specifically under their purview, under the 73rd and 74th Constitutional Amendments. The specific responsibility and accountability of the male junior health assistant needs to be clarified. They also need supervision in this regard. *Provision of safe water supply and sanitation form the very basic, first generation, public health interventions* and need to be owned by the health department.

Another early development in preventive medicine, closely linked to public health, started in the 18th century relates to *nutrition, another basic determinant of health*. Use of fresh fruits and vegetables was recommended in 1753 for the prevention of scurvy among sailors even before the causative agent was known. There has been tremendous growth and development in the science of nutrition since then. Our own ancient Indian systems evolved food production patterns, diets and methods of cooking that provided a balanced diet in different seasons and suited to various physiological conditions. Despite rich traditional and modern knowledge bases, recent data from the National Family Health Survey II (NFHS II) and National Nutrition Monitoring Board (NNMB), regarding nutritional status reveals widespread under nutrition particularly in young children and among women in Karnataka. Nutrition has also been found to have been very neglected by the DHFW. Malnutrition in Karnataka is a major public health issue and is being accorded the highest priority as an area for intervention by the Task Force on Health & FW. It is therefore being covered in a separate chapter (Chapter 7). Deeper underlying issues of food and nutrition security are linked to irrigation, agriculture and seed policies;

to employment, income and purchasing capacity; and to access by the poor to public distribution systems. These too need to be addressed.

The Germ Theory and Infectious Diseases Control

The second generation of public health evolved with the discovery of bacteria and the growth of microbiology. Development of diagnostics, therapeutics, vaccines, and an understanding of disease transmission patterns made it feasible to initiate control programmes for communicable diseases. The current disease burden due to communicable or infectious diseases in Karnataka still accounts for a major share of morbidity and mortality. Cost effective public health interventions exist for most infectious diseases. For newer emerging diseases such as HIV/AIDS, research is taking place at a fairly rapid pace and diagnostics and anti-retroviral drugs are already available. However about 30 new infectious diseases have been reported globally over the past 2-3 decades and the State needs to be alert to them.

An important underlying public health principle is that the method of transmission of communicable diseases determines the choice of the method of disease control to be used. Diseases with similar modes of transmission are grouped or classified together e.g., water borne diseases, faeco-oral diseases, soil mediated infections, food borne diseases, respiratory infections that are air borne, insect or vector borne diseases, diseases transmitted via body fluids, ectoparasite zoonoses, domestic zoonoses etc. Only important diseases that require priority attention and intervention are covered in this report. The *faeco-oral group of diseases include* amoebiasis, giardia, gastro-enteritis, bacillary dysentery, cholera, typhoid, hepatitis A & E, and poliomyelitis. Breaking the faecal-oral chain is the basis of control, namely by personal hygiene, increase in water quantity, improvement in water quality, food hygiene and provision of sewage disposal and sanitation systems.

Another public health principle is that *priority is given for control of infectious diseases based on criteria such as magnitude of problem using epidemiological criteria, severity of diseases, and availability of effective, safe interventions at reasonable cost.* Though appearing commonsensical and obvious, a review of major public health programmes reveals the lack of priority given to these priority problems and to practicing public health principles in their control, with resultant heavy preventable burdens of morbidity and mortality. For example, tuberculosis which was identified in 1947-48 as India's foremost public health problem, continues to be so in Karnataka in 2000-1, despite having a well researched and designed control programme and despite the availability of diagnostics and cost effective drugs for treatment, all of which are indigenously manufactured. The National Tuberculosis Programme (NTP) has not received adequate attention or resources from politicians, decision makers, administrators and the DHFW. Thus it has been neglected and poorly supervised and implemented. In the Revised National Tuberculosis Control Programme (RNTCP) also, Karnataka is currently the second poorest performing State in the country. This apathy has resulted in much avoidable suffering and even in unnecessary death.

Another example is of malaria. The early successes of the National Malaria Control Programme have not been sustained. The increased number of cases and outbreaks in different parts of the state are of concern. Malaria was controlled in Mysore State in the pre-DDT era, through public health interventions including public health engineering and larvicidal fish. These bioenvironmental methods were unfortunately later abandoned with complete reliance on chemical pesticides and chemotherapy. Increasing resistance to drugs and pesticides and the harmful toxic effects of pesticides have resulted in a rethinking of strategy. Other vector borne diseases also have a fairly high incidence and prevalence in certain regions e.g. filaria, dengue fever, Japanese encephalitis, etc. Specific technical dimensions for each disease are given later. Another simple public health principle in

communicable diseases control is that the health system should ensure *early detection, complete treatment, recording and reporting (or notification) through a disease surveillance system* (this is covered in greater detail later).

Public health and non-communicable diseases

The major burden of disease in developing country situations is often thought to be mainly “diseases of poverty”: which is thought of synonymously, as infectious diseases and malnutrition. This is reflected in health planning and financing priorities, with little attention paid to chronic, non-communicable diseases. It is now recognized that social, demographic and epidemiologic transitions have been occurring over the past few decades, and countries and states like ours have a substantial burden of these diseases as well. *A public health approach addresses the risk factors that predispose to these diseases such as tobacco, alcohol, exercise and food habits, environment and occupational risk.* For instance, lower salt intakes at a population level are found to result in lower blood pressure levels and less hypertension. More recently, it is found that poor nutrition and other factors during intra-uterine foetal life increases risk to these diseases later in life. **Reduction of risk factors through health promotion, community and public action, are part of the control strategy along with early detection and good clinical management.**

Health systems and public health

An additional premise is that there are certain health system prerequisites and primary health care principles that need to be met, in order to achieve good infectious disease control. The strategy of improving the functioning of general health services especially at PHC and CHC level is important in providing comprehensive, affordable, good quality, diagnostic and treatment facilities as close to the homes of people as possible. Diseases control interventions need to be integrated into the functioning of the general health services as part of a comprehensive primary health care service. *This horizontal integration at primary care level is to be supported by more specialized referral and support services at taluk/district and state level, through a referral system.* The primary health care service needs to be credible so as to win the confidence of people. Only then will people utilize it to meet their basic health care needs and for what government may consider priority health programmes, be they communicable diseases control, family welfare, non-communicable diseases control, etc.

These basic tenets of a good community health care service have been found lacking in our sub-centres, PHCs and CHCs in the state. The Interim Report of the Task Force recommended 24 hour services at PHCs, with filling up of gaps in infrastructure including residential quarters, water supply, electricity, vacancy positions for different grades of personnel, supply lines for drugs and laboratory equipment/consumables, communication systems etc. These are prerequisites for a good service and for infectious disease control.

Primary Health Care

The Primary Health Care approach, as a strategy to attain the international social goal of Health for All by 2000, was articulated and accepted at a WHO-UNICEF conference in Alma-Ata in 1978. It expanded the scope and strategies for public health. Recognizing the limitations of medical science alone in improving the health of people, it emphasized the need to address determinants of health *through inter-sectoral collaboration*, especially with departments of agriculture, food supply, water supply, sanitation, housing and education. It *emphasised the need for equity and social justice in health, and health care.* It recommended *shifting control over health care systems, with greater decentralization; and involvement of local people* and communities in decision making and planning health care systems to suit their own social, economic and cultural

conditions. It utilized scientific methods of proven effective, safe, acceptable and affordable treatments and interventions in the preventive, promotive, curative and rehabilitative areas, but ***also encouraged indigenous and traditional systems of medicine***. It had a social goal of improved health and quality of life; access to health care by all; maximum health benefits to the greatest number; increased self-reliance of individual persons and communities, and the promotion of social means of reaching these goals. Thus public health went through another paradigm shift. Experience and thinking from India along with those from other countries, helped in making this shift.

The following excerpts from the original documents are given for a clear understanding of concepts. These are being given in some detail as they form a core element of the task force recommendations.

“Primary Health care is essential health care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost that the community and country can afford. It forms an integral part of the country’s health system of which it is the nucleus and of the overall social and economic development of the community” (WHO-UNICEF, 1978).

“It means much more than the mere extension of basic health services. It has social and developmental dimensions, and if properly applied will influence the way in which the rest of the health system functions” (ibid).

“It is the first level of contact of individuals, the family and the community with the national health system bringing health care as close as possible to where people live and work, and constitute the first element of a continuing health care process” (ibid).

The four key underlying principles of primary health care are

Equity through equitable distribution of health resources.

Community participation and involvement.

Intersectoral co-ordination between health and development.

Use of appropriate technology for health.

The eight components of primary health care comprising the core technical package are :

Education concerning prevailing health problems and about methods of identifying, preventing and controlling them.

Promotion of food supply and proper nutrition.

Adequate safe water supply and basic sanitation.

Mother and child health services including family planning.

Immunization against major infectious diseases

Prevention and control of locally endemic diseases

Appropriate treatment of common diseases and injuries

Provision of essential drugs.

India was a significant contributor and signatory to the World Health Assembly (WHA), 1977 and the Alma Ata Declaration of 1978. The concept of comprehensive health care had already been articulated in India through the Bhore Committee Report, in 1946, a document which formed the early basis for India’s health planning. Primary health

centres had been initiated since 1952. The National TB programme, 1962, had the seeds of the primary health care approach. The Shrivastava Committee report 1974, made links between education and training of socially oriented doctors, all grades of health personnel and community health needs. A national scheme for Village Health Workers was launched in 1977. Post Alma Ata, in 1981, the Indian Council for Social Science Research and the Indian Council for Medical Research brought out a publication "Health for All". The National Health Policy based on principles of primary health care was tabled in 1982 and passed by Parliament in 1983. It is still the operating policy statement as of now. State governments, including Karnataka, accepted the Health for All (HFA) goals and Primary Health Care (PHC) strategies. **The Ninth Plan document of the Government of India committed itself to the goal of "Health for all, particularly for the underprivileged".**

However statements and public commitments are at risk of becoming rhetorical. They need to be followed by action, resource flows, systems for accountability and measurement of outcomes and impacts. Analysis reveals declining state expenditures on nutrition and lack of responsibility and accountability for nutrition by the DHFW. Intersectoral work to ensure potability of water and provision of sanitation facilities is ongoing since the early 1990s, but coverage is incomplete. Data reveals the high, continuing preventable burden of water related diseases. State health expenditure is stagnant and below norms. A large proportion of primary health centres continue to function sub-optimally. Coverage and quality of basic antenatal care and immunization continues to be low in Category C districts. Diseases like TB continue to take a heavy toll with government health services providing complete treatment or cure to only 8-16% of expected sputum positive pulmonary TB patients. School health services are of poor quality and have limited coverage. Community mental health care programmes at district level have not been taken up seriously, though the epidemiological burden has been well documented. The essential drugs concept is not practiced in spirit. Health education and promotion receive little interest and is too focussed on Family Welfare. The public lack of confidence in public health services. Public health and primary health care have been neglected and distorted and that planned, systematic efforts are required to revive and institutionalize public health practice into the Directorate of Health and Family Welfare Services.

Recommendations

- *All the staff of the Department of Health and Family Welfare Services must appreciate the importance of Public Health and the synergy between primary health care and public health. This will be reinforced through in-service orientation programme and short training programmes for all health personnel.*
- *The Public Health Institute will be upgraded to be a nodal centre for all laboratory services and research. It will be headed by the Additional Director of Communicable diseases.*

5.2 WATER AND SANITATION

Water is variously considered as life giving, life sustaining, purifying, a vital nutrient and essential for life. However, it can also spread diseases and kill. Predictions are that drinking water is becoming a scarcer commodity. With ground water being used faster than it can be recharged, shortage of drinking water is likely to become an important problem in the future. Fifty percent of infant deaths are attributed to waterborne diseases. An estimated 1.5 million under-five deaths occur in India every year, due to water related diseases, and approximately 1800 million person hours are lost annually in the country, due to the same. It is estimated that poor quality and inadequate quantity of water accounts for about 10% of the total burden of disease in developing country situations, as in Karnataka State.

Medical professionals and health providers are generally content to treat the symptoms of the sickness or morbidity resulting from lack of access to safe, potable water supply. However, the problem needs to be addressed at a deeper level through primary prevention of disease. *Therefore, the government of Karnataka and specifically the Directorate of Health are advised to pay greater attention to their role in implementation of water supply and sanitation schemes and extend access to these basic services to the entire population of the State as an issue of citizens' rights within a tight time frame of 3-5 years.* This requires inter-sectoral collaboration with Water Supply and Sanitation Boards, Pollution Control Boards and local government bodies. Linkages with community groups and consumer groups, will help monitor performance and also to reach out to individual households and families, with health promotion messages, as personal hygiene practices and utilization of sanitation facilities are also important for overall reduction of water and sanitation related diseases.

Pollution of water occurs through:

- a) domestic sewage with organic matter and micro-organisms;
- b) industrial effluents with organic matter, toxic chemicals and heavy metals;
- c) agricultural run-offs also contaminate, through chemical fertilizers and pesticides;
- d) urban run-offs have a combination of sewage and chemical contamination; and
- e) excess of fluoride and arsenic in the water.

Chemical contamination produces cumulative toxicity after long exposure.

Microbial contamination is the more important and frequent cause of ill health, with 20-30 infectious diseases (viral, bacterial, protozoan and helminthic) being transmitted through water. Examples of these diseases are,

- a) **water washed diseases** – scabies, trachoma, with inadequate water for personal hygiene causing spread to occur through water used for bathing;
- b) **water based diseases** – infections transmitted through aquatic invertebrate animals e.g. schistosomiasis and dracunculiasis (guinea worm disease);
- c) **water related diseases** – infections spread by insects that depend on water through vector breeding in water – malaria, filariasis, dengue fever;
- d) **water borne diseases** through faecal contamination – diarrhoeas, dysentery, cholera, typhoid, Hepatitis A, amoebiasis, giardiasis, helminthic infestations/ intestinal worms, campylobacter, etc.

The group of diseases, in (d) called the faecal oral group are transmitted from person to person through water or food via the oral route. **Breaking the faecal-oral route forms the basis for public health intervention for disease control. This is through a combination of good personal hygiene, increased water quantity, improved water quality, food hygiene and provision of sanitary facilities.**

Inadequate access to water has important social dimensions with women, the rural poor and scheduled castes and tribes being more adversely affected. One third of Indian villages do not have safe water supply as of now. In Karnataka reportedly 86% of the total population have access to safe water supply and 53% have access to sanitation.

Poor access of household to sanitation facilities (toilets) and lack of functional environmental sanitation (drainage, sanitary waste disposal) are closely associated with microbial contamination of water and soil. This is a major route of disease transmission through contamination of water (diseases listed earlier) and soil. The latter include

roundworm, hookworm, whipworm etc. Lack of provision of sanitation facilities remains one of the most neglected area of intervention to improve public health. Schemes that are available are inadequately publicized and poorly implemented due to corruption in undertaking construction work. Where toilets are built, most often there is no water. Lack of access to toilets and privacy is particularly a problem for girls and women. Lack of gender sensitivity in not providing for such a basic need, should be rectified with the utmost urgency. Maintenance of drainage systems is important for control of vector borne diseases as well.

Interventions

The central government has supported the state through several programmes, in introducing interventions to provide safe water supply and sanitation facilities. These include the National Water Supply and Sanitation Programme (1954), the Accelerated Rural Water Supply Programme (1972), the Minimum Needs Programme (1974), the International Drinking Water Supply and Sanitation Decade Programme (1981), the Twenty Point Programme (1986), the Rajiv Gandhi National Drinking Water Mission and the Netherlands Assisted Project covering Bijapur and Dharwad districts from 1991–97. The latter is developing uniform water sector norms for the state. Karnataka more recently initiated the Integrated Rural Water Supply and Environmental Sanitation programme in 1993, in 12 districts (Bangalore Rural, Tumkur, Shimoga, Mysore, Mandya, Hassan, Dakshin Kannada, Belgaum, Gulbarga, Bidar, Bellary, Raichur). This project was with World Bank funding of Rs. 447.2 crores. The first phase from 1993 – 1998 was extended till September 2000 and closes by March 2001. The number of districts covered expanded to 16. The next phase will cover the period 2002–07. Water quality testing laboratories were set up or upgraded in 12 districts. Village water and sanitation committees were formed and this collaboration needs to be reviewed to learn from the process so far. Local women and men are trained as masons to construct drains for sullage water, with 50% labour charges from the community and 50% from the project. Building low cost latrines and composting are part of the strategies. Developing the financial, technical and administrative capabilities of gram panchayat members through training is being planned.

Recommendations

While other departments are responsible for storage, treatment and distribution of water, the department of health, has specific responsibilities. It needs to:

1. Reduce water borne diseases through the following measures:

- *Set and make known standards for water quality and set timebound goals to reduce mortality and morbidity due to water borne diseases.*
- *Undertake regular, periodic testing for microbial contamination, while new water sources will need an initial detailed testing for chemical contamination. This is to ensure that standards are maintained. Results should be reported to gram panchayats and be available to the public.*
- *Undertake, supervise and be responsible for water purification treatment e.g. chlorination of wells in rural areas with collaboration between the panchayats / local bodies and health personnel. Mapping of water sources should be undertaken at PHC level.*
- *Undertake surveillance and notification to the concerned authorities regarding early outbreaks of waterborne diseases. This will be part of the disease surveillance system.*
- *Initiate rapid action in suspected outbreaks.*

- *Introducing health promotion activities concerning water and sanitation related problems at all levels - through schools, panchayats, women's sanghas, the print and audio visual mass media and folk culture groups. The linkage between health status and water supply, sanitation and drainage needs to be highlighted, focussing on how disease transmission occurs. This will also convey positive messages regarding personal hygiene practices, environmental hygiene and how to utilise government schemes.*

II. Improve sanitation by

- *Introducing schemes for toilets in schools, meeting halls, bus stands and other public places, and for individual households, through partial subsidies and private and voluntary sector participation.*
- *Maintenance of drainage systems at local village and ward levels to be monitored by the male health assistant.*
- *Introducing solid waste management including popularising composting and vermiculture for organic waste and other measures.*

III. Develop health promotion, advocacy and social mobilization.

- *Advocacy and social mobilization efforts to be undertaken proactively at local levels for health personnel, communities and panchayats to view safe water supply, sanitation and drainage of sullage as a package of services that have a positive impact on improving public health. Involvement of local communities in implementation and management of systems is crucially important.*

5.3 WASTE MANAGEMENT AND POLLUTION CONTROL

5.3.1 Solid Waste Management and Pollution Control

Solid Waste Management has been receiving greater attention in the recent past. With the signing of the International Treaty banning the import of hazardous waste into the country, there has been accelerated efforts towards safer waste management practices. Different waste streams have been identified for better management. Among them are Hazardous waste, Bio-medical Waste and General Municipal Solid Waste.

The Centrally promulgated Environment Protection Act, 1986 and rules therein (Hazardous Waste (handling and management); Biomedical Waste (handling and management) and Municipal Solid Waste (handling and management)) currently govern the waste management practices.

While Management of Municipal Solid Waste is an obligatory function of the Municipalities and the local governments, the principle of Polluter pays with the onus of responsibility on the generator for safe management holds true of the other special categories of waste.

The State of Karnataka has been leading in terms of activities towards safe management of waste especially the Solid Waste and Health Care Waste. Community Based Organisations and Neighbourhood groups have been leading the endeavours. The Bangalore Agenda Task Force has set for itself Night Collection of Garbage, Door to door collections of Household waste, Dumping Yard, and modernisation of transport vehicles.

The Problems related to Waste Management are as follows:

- Lack of an efficient link and co-operation between the elected and assigned body
- Multiple departments with different responsibilities towards solid waste management.
- Lack of comprehensive policy and long-term planning
- Lack of appropriate trained staff in management and planning

Recommendations

General Waste Management:

- *Set up a working group to look at the recommendations of the Supreme Court Committee for management of solid waste in Class I cities and draw up an Action Plan for implementation in Karnataka.*
- *Learn from experiences in Bangalore regarding primary (Door-to-door) collection of Garbage and expand it to the other cities and towns.*
- *Accelerate the process of identifying and utilizing the Landfill sites.*
- *Delineate the elements of an Integrated Waste Management Policy at the State level.*
- *Identify mechanisms for improving the functioning of the local self- governments with regards Solid Waste handling (Financial expertise and Technical expertise including).*

Special Waste Management:

Hazardous Waste

- *Steps to be taken to publicise and bring in greater transparency in the functioning of the State Pollution Control Board including the punitive measures taken against the polluting industries.*
- *Set up the working group to examine the existing provisions of the Environment related acts (Water Act, Air Act and Environment Protection Act) and the impact of the 73rd and 74th Amendment to the Constitution of India (Nagarapalika and Panchayath Raj Acts).*
- *Regulate the use of Plastics including the implementation of the ban on plastics less than 20 microns thick.*
- *Steps to be initiated to regulate the use of Mercury and other heavy metals in industries.*
- *Study the quantity and characteristics of the hazardous waste being generated in Small scale industries and household industries in the state and take appropriate action.*

Natural Resources depletion and Pollution abatement:

- *Steps to be initiated to study the recommendations of the Eco-committee report under the chairmanship of Sri A N Yellapa Reddy and drawing up of an Action Plan for its implementation.*
- *Health Impact Assessment to be made mandatory along with Environment Impact Assessment for developmental projects.*
- *Initiate steps to address the abatement of indoor air pollution within households (efficient and effective use of firewood and other fossil fuels; popularizing the use of LPG).*

- *Steps and mechanisms to be identified to localise and regionalize the treatment of sullage and sewerage before it is let into the water bodies.*
- *A annual massive public health campaign to make the community work towards waste reduction and recycling endeavours to be initiated along the lines of the National Environment Awareness Campaign along with the Karnataka Rajya Vignana Parishad and the network created by the Jana Arogya Sabhe.*
- *Set up official transparent working mechanisms of independent monitoring systems with active participation of the community to prevent natural resources depletion and work for pollution abatement*

5.3.2 Hospital Waste Management

Infectious waste from healthcare facilities poses a risk to the environment and to the people. Medical waste should be scientifically and hygienically managed from the point of generation to final disposal. Inappropriately managed medical waste can spread fatal diseases like Hepatitis B & C and HIV/AIDS.

Legal Aspects:

The Bio-medical waste (management and handling) rules of the government of India has been effected from July 1998 with a view to ensure safe and effective disposal of infectious and hazardous waste. These rules define the role of administrative medical officers of health facilities in waste management. Segregation, treatment and disposal options for different categories of waste have been specified based on location and size of hospitals. While hospitals located in towns and cities with population less than 5 lakhs may have simple disposal options like deep burial for infectious waste, hospitals located in towns with more than 5 lakhs population will require to use other options.

In Karnataka efforts are currently on to implement systems for safe management of health care waste in all the secondary care hospitals under KHSDP.

Waste management activities under KHSDP

The short and medium term waste management strategies are at various stages of implementation in all the re-commissioned hospitals.

An initial situational analysis at KHSDP hospitals revealed that:

- The total infectious and hazardous wastes form 15-20% of the total waste generated; the sharps generated were 5-10% of the hazardous waste.
- The total infectious and hazardous wastes generated was only 0.24 kg as against the norm of 0.5 kg - 1.5kg per bed per day.
- The daily incinerable waste is low and does not warrant use of incinerators. The present system of deep burial and landfill is adequate.
- The storing facility for recyclables is adequate and would need market sale once in a quarter.

Waste management audit in the hospitals revealed the following errors in practice:

- Mistakes in segregation of waste at source;
- Mixing of sharps with other recyclable waste; Ambiguity about final disposal of sharps and plastics;
- Disposables not being mutilated

- Inappropriate location of bins
- Biodegradable waste in deep burial not being covered properly with mud
- Untrained contractual waste handlers are handling the waste
- Ineffective disinfection

Therefore remedial measures including retraining and continuous monitoring is being put in place

In some of the bigger cities like Bangalore, several efforts are being implemented.

- Individual private hospital-based efforts including segregation, incineration, deep burial etc. But these attempts may give rise to environmental pollution due to individual institutions attempting an incineration system, which does not meet quality standards.
- Smaller nursing homes being served by private commercial waste-management companies.
- Networking of some hospitals along with community-based neighbourhood groups. E.g. M.S. Ramaiah Hospital and "Swabhimana"- This pilot project aims at using the "Ward approach" and the common administrative machinery for safe and scientific disposal of solid as well as health care waste within the defined geo-political area.

Issues of concern in Bangalore and other large cities

The several in depth studies undertaken by Tata Energy Research Institute (TERI) in the area of Environmental Pollution including solid waste as well as hospital waste management in Bangalore. have brought out several issues of concern, problems and lacunae in the system. The same can be applied to other cities and towns in Karnataka.

- There are multiple departments with different responsibilities towards waste management, thereby making for unsatisfactory monitoring and enforcement of the rules and regulations.
- Lack of a comprehensive policy and long-term planning to handle the waste in a scientific manner.
- Huge amounts of waste is being generated in large cities. Bangalore for instance with a population of around 6 million generates 2,000 tonnes of solid waste per day. Of this, 12,500 kg of health-care waste is generated by the hospitals and nursing homes and 1,000 kg from general practitioners.
- Only 15% of waste generated in a hospital is infectious. The current practice of mixing the small amount of infectious wastes with a huge amount of non-infectious waste renders the entire waste infectious to the general population. So rag pickers and other waste handlers outside the hospital set up are under constant risk of infections from the waste.
- Infected waste is transported in open trucks and there is open burning and dumping into low lying areas and lakes. The several complaints by people about the malodor from hospital waste and malodor and smoke resulting from open burning are generally ignored.
- Infected waste including plastics and sharps are incinerated by cheap poor quality incinerators within hospital premises.
- Plastic waste is sold without adequate disinfection.
- Single-use needles and syringes are not destroyed and are being repacked and reused.
- There is lack of appropriate training of staff in health care institutions to manage waste and in infection control measures.

There is urgent need to rectify this situation. We need to address the problem of waste management in a proactive way, using **the 3 R's: reduce waste, recycle waste and reuse wherever possible.**

Waste management involves careful segregation, processing, collection, transport, and final disposal of various types of waste; effective training of staff, and supervision and monitoring of the system.

The key strategy in healthcare waste management should include:

- Institutional infection committees and policies.
- Segregation of waste at the point of generation, using a convenient classification to identify the different infectious components.
- Disinfection of the waste by thermal inactivation (steam sterilisation autoclaving, hydroclaving), incineration, gas / chemical disinfection, irradiation, microwave technology or certain other innovative alternative technologies.
- Destruction /disfigurement of sharps; shredding of plastics.
- Recycling of recyclable material.
- Lastly, safe disposal through discharge through sanitary sewage systems, land-fills etc.
- Biomedical waste rules, 1998 prohibits incineration of chlorinated plastics.

Plastics and chlorinated waste should not be incinerated as this will lead to release toxic dioxins and furans sulphur dioxide, oxides of nitrogen hydrochlorides etc., which are potent carcinogens. Plastics are not bio degradable and deep burial will result in leaching and contamination of soil and surrounding water bodies. Therefore minimisation of use of plastics (and sharps); decontamination; deforming and recycling should be practiced

The solutions for cities and towns should be towards common health care waste management facilities as an integral part of the solid waste management.

Recommendations

At Governmental level :

There is need for an integrated approach to safe management of health-care waste with coordination between all stakeholders- Health care settings, Doctors, civic authorities and the community.

- *The Pollution Control Board should take steps to effectively implement its monitoring and regulatory activities.*
- *The Andhra Pradesh experience (Task Force for independent monitoring and reporting), and Tamilnadu experience (Development of Model centres in each district) towards development of systems for safe management of health care waste to be studied and appropriately incorporated into the working of the Advisory committee to the Appropriate Authority on Bio-medical Waste Rules in Karnataka.*
- *The waste management initiatives at the KHSDP Hospitals should be strengthened.*
- *The government should provide certain common facilities like collection & transport, incineration, sanitary landfill sites etc. for all Towns and Cities.*
- *The government should support private initiatives for common waste management and treatment facilities including recycling units.*

- *The expertise of organizations like TERI, and the experience from the pilot project of M.S. Ramaiah-Swabhimana could be used appropriately.*
- *All aspects of Safe Management of Health Care Waste should be incorporated into the curriculum for all health sciences*

At individual level :

- *Ensure proper segregation of waste and total waste management at all health care institutions. The segregated waste streams should not get mixed up with general solid waste.*
- *The segregated waste should be disinfected; sharps should be destroyed /disfigured and plastics shredded before final disposal through discharge through sanitary sewage systems, land -fills etc.*
- *Recyclable material should be sent for recycling.*
- *Ensure training of Health Care Personnel for proper waste management practices including practice of Universal Precautions.*

5.4 COMMUNICABLE DISEASES

"The microbe is nothing ; the terrain everything." - Louis Pasteur

Diseases are commonly classified as being communicable where there is a causative infectious organism, non-communicable where there is not. This boundary has become less well defined in certain conditions, for instance hepatitis B virus infection leading to liver cell cancer and human papilloma virus leading to cancer of the cervix in women.

Communicable (infectious) diseases occur following the transmission of infectious organisms or agents or their toxic products, from infected persons, animals or reservoirs to susceptible hosts (persons), directly or indirectly through vectors, intermediate hosts (vertebrate or invertebrate) or the environment. The method of transmission determines the method of control as a public health intervention.

5.4.1 Vector-borne Infectious Diseases

Introduction

The vector-borne infectious diseases of public health importance in Karnataka are Malaria, Filariasis, Dengue fever, Japanese Encephalitis (JE), and Kyasanur Forest Disease (KFD). In addition, West Nile virus infection has been reported in Karnataka, but little is known about its consequences. There have been occasional reports of Rickettsial fevers, but epidemiological importance of such findings has not been established. In the past, outbreaks of Chikungunya virus infection had been documented, but it has disappeared. It has the potential of re-emergence as long as vector-control is not achieved. Although human plague has not been reported in Karnataka for about 4 decades, the possibility of its re-appearance has to be borne in mind.

Malaria, Filariasis, Japanese Encephalitis and Dengue fever are mosquito-borne and Kyasanur Forest Disease is tick-borne. The mosquito-borne infectious diseases are more widespread in the State, with several districts being affected, whereas KFD is confined to essentially one focus and its contiguous geographic areas.

Control measures for malaria and filariasis follow the guidelines and are supported by the National Anti Malaria Programme (NAMP) and National Filariasis Control Programme. On the other hand, there are no organised or systematic control activities against the remaining mosquito-borne infectious diseases (Japanese Encephalitis, Dengue fever). The establishment of JE and Dengue fever control measures, under the State Ministry of Health, must be considered seriously.

It is recommended that the four major mosquito-borne infectious diseases (Malaria, Filariasis, Japanese Encephalitis, Dengue) are taken together for epidemiological investigations, disease surveillance, monitoring of vector breeding and adult densities, vector control and reduction of mosquito-human contact. This will entail leadership from the State health authorities to ensure an integrated and holistic approach at the village, panchayat, taluka, town, city and district levels. This will also entail the unification of the vertical programmes on Malaria and Filariasis with State designed programmes on Japanese Encephalitis and Dengue fever, at the local levels. In this manner, the entomological personnel and expertise, material and money, already available in the districts but which are fragmented due to vertical restrictions, must be brought together, in a streamlined manner. This will result in better effectiveness and efficiency in controlling all mosquito-borne infectious diseases.

Vector borne infectious diseases and development strategies

There is increasing evidence today that the *spread of vector borne diseases are also a by-product or social cost of our development strategies that are mosquitogenic in various ways*. Agricultural development and the shift from dry to wetland cultivation, the increase of water availability due to canals and tanks and the introduction of irrigated rice fields are all known to introduce or increase the potential of mosquito breeding especially *Culex tritaeniorhyncus*, the vector for JE. Urbanisation and especially increasing construction activity introduces the establishment of the urban malaria vector potential (*Anopheles stephensi*) in cement tanks and 'curing' sites. *Aedes aegypti* mosquito breeding is also enhanced by urbanization by increasing breeding sites such as small containers, water coolers, flower pots and discarded tyres.

The spread of malaria and JE in many parts of Rural Karnataka can be directly correlated to such development. The introduction of malaria into Mangalore is linked to a boom in construction, establishment of *Anopheles stephensi* breeding and the migration of construction labour from malaria endemic areas of the country, bringing the parasite along.

Epidemiological surveillance and laboratory diagnostic services

Malaria and Dengue are fever syndromes, easily suspected on clinical basis. Dengue virus infection may cause dengue fever or the Dengue Haemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS), which are also clinically recognizable. Japanese Encephalitis, an Acute Encephalitis Syndrome, is one among a number of etiology-specific encephalitidis. Filariasis may cause a variety of clinical diseases which may not be easily recognized, except when certain specific conditions like orchitis or epididymitis occurs. Thus, a disease surveillance system, depending primarily on clinical diagnosis, can cover several of the above diseases. A district level epidemiological surveillance system and the inclusion of malaria, dengue fever, fever with bleeding tendency and acute encephalitis as diseases to be included under it may be established.

Malaria and microfilaremia are easily diagnosed by suitably prepared blood smear examination. This diagnostic skill and the necessary microscope, slides and reagents are already made available at the PHC and all higher levels of health care. On the other hand, there is no State level diagnostic facility for Japanese

Encephalitis or Dengue virus infections. Currently, help may be taken from two laboratories – one, the Field Station of the ICMR National Institute of Virology, situated in the Bangalore Medical College, Victoria Hospital and the neuro-virology laboratory of NIMHANS. In fact, these laboratories themselves take leadership in conducting various investigations and the results may or may not become available to the health authorities of the State.

There should be a State Level Diagnostic and Reference Laboratory for the purposes of diagnosis, epidemiological investigations, monitoring and evaluation of mosquito borne virus infections in addition to other diseases of public health importance.

New kits for sero-epidemiology and new diagnostic aids for enhancing potential of surveillance and diagnosis are constantly being added in the area of vector borne diseases. These should be carefully evaluated and introduced only if they are cost effective and operationally superior to existing methods and not under the influence of marketing strategies by their promoters.

Entomological surveillance and Health Impact Assessment (HIA)

Vector surveillance is an important component of vector borne disease control programmes. *Entomological capacity needs to be greatly enhanced by filling vacancies with qualified personnel and making regular entomological surveillance a crucial component of epidemiological surveillance strategies at all levels.*

Excellent work by the Malaria Research Centre (MRC) in Bangalore, has scientifically established the potential of effective bio-environmental control strategies in rural Kolar and other parts of the state. This has included the involvement of civic society and citizens' groups in Mangalore city. This potential must be urgently explored and promoted as an important core component of Integrated Vector Borne Diseases Control Strategies in the state. Maharashtra, Andhra, Goa and other states are investing in bio-environmental strategies as a long term, low cost, environmentally sustainable strategy. Karnataka should also integrate it into their strategy. Linked to this approach is also the *need for urgent Health Impact Assessment (HIA) of all new and ongoing development projects especially their 'vector potential'*. Capacity for HIA must be urgently developed in the Directorate as another important component of an *integrated vector borne disease control programme*.

Malaria in Karnataka

The National Malaria Eradication Programme of the 1950's met with success, but malaria made a come back in late 1960's. By then the vector mosquitoes had developed resistance to insecticides. Whereas malaria had been confined to rural communities previously, resurgent malaria is both urban and rural. Earlier, malaria parasites had been fully sensitive to antimalarial drugs, but now falciparum parasites are increasingly becoming resistant to chloroquine and other newer drugs as well. Resistance has appeared even among vivax parasites. As malarialogists realized that malaria could not be eradicated, the programme was renamed as National Malaria Control Programme. In the 1990's even control was felt to be unattainable and the name has been changed to National Anti-Malaria Programme (NAMP). In 1997, in Karnataka, 7,304,866 fever cases were investigated with blood smear microscopy in various rural health care institutions and 161,775 cases of malaria were detected. In addition, in 8 urban populations 103,671 cases of fever were investigated and 12,548 more cases were detected. The number of falciparum cases was 40,295. In 1998 there were 107,910 rural and 7521 urban cases diagnosed with positive smear examination.

One of the major deficiencies of the Anti Malaria Programme is the lack of systematic reporting of malaria seen in the private sector health care clinics and institutions. Therefore, the statistics tends to be skewed towards predominantly rural data. The government sector urban malaria scheme covers only 8 cities / towns in the State, namely Bangalore, Bellary, Hospet, Belgaum, Raichur, Hassan, Chickmagalur and Hassan. The State itself must take the initiative to establish the essential ingredients of urban malaria programme in all cities and towns in which malaria has been detected. With the establishment of the holistic integrated vector borne disease programme and the epidemiological and vector surveillance systems, the state health authorities will be able to get a comprehensive picture, with locality-specific prevalence, as well as time trends of malaria.

There is urgent need to investigate systematically the frequency and geographic distribution of chloroquine resistance in *Plasmodium falciparum* and also in *Plasmodium vivax*. These may require expert advice from the National Anti-Malaria Programme, but this process must be defined and established by the state health authorities. The State Level Diagnostic and Reference Laboratory may be entrusted with the continued investigations of drug resistance.

It is also necessary to investigate the susceptibility / resistance of Anopheles mosquitoes to the currently used insecticides. Insecticide sprays / fogging to reduce adult mosquito population should not be done 'routinely' but as specifically planned and applied judiciously, in chosen places and times, as the last resort in Malaria Control. The use of insecticides under health programmes (such as malaria and filariasis control) or under other Departments (such as Agriculture) should be regulated and monitored by the State Health Authorities, through the integrated vector borne diseases programme.

The statistics on malaria, under the Anti-Malaria Programme are given in the Table 5.1.

Table 5.1 : The burden of malaria detected under the NAMP in Karnataka

Year	Blood smears examined	No. positive	P.falciparum	ABER *	SPR *	API *
1993	70,98,579	1,96,466	49,246	17.70	1.1	2.0
1994	71,10,997	2,66,679	37,789	15.80	3.8	6.6
1995	71,11,888	2,85,830	39,601	17.45	4.0	7.0
1996	76,81,802	2,19,298	32,606	18.50	2.9	5.3
1997	77,26,572	1,81,450	49,245	15.40	2.2	3.3

*ABER: Annual Blood Examination Rate; SPR: Slide Positive Rate; API: Annual Parasite Index.

In 1998, the reported number of cases was 115,431 (the final tally not yet available). These numbers are from the NAMP, and the burden of malaria detected and treated by the private sector remains unknown. This is a large gap, since 70% of outpatient treatment occurs in the private sector. Malaria also has a periodic cycle and longer time trends need careful monitoring.

The NAMP is organized into District Programmes in the following districts:

Gulbarga division	:	Bellary, Bidar, Gulbarga.
Belgaum division	:	Bijapur, Belgaum, Dharwad.
Mysore division	:	Chickmagalur, Dakshina Kannada, Hassan, Kodagu, Mandya, Mysore.
Bangalore division	:	Chitradurga, Shimoga, Tumkur, Kolar, Bangalore Rural, Bangalore Urban.

In these regions there are 688 malaria clinics, 2997 fever treatment units and 6702 antimalarial drug distribution centers.

Filariasis in Karnataka

Karnataka is endemic for lymphatic filariasis. Its control is another centrally sponsored National Filaria Control Programme. This programme is operative in only 8 districts endemic to the disease, namely, Gulbarga, Bagalkot, Bidar, Koppal, Dakshina Kannada, Udupi and Uttara Kannada. Each district has a Filaria Control Unit, and in selected towns in these districts there are 25 Filariasis clinics. In addition to the above, there is a Filaria Survey Cell in Raichur.

The burden of disease and infection may be seen from the Table 5.2.

Table 5.2 : Burden of disease and prevalence of microfilaremia / filarial diseases in Karnataka

Year	No.persons examined	No.of persons diagnosed clinically	No.treated	No.of persons positive for MF	MF rate %
1995	122,484	3480	4444	964	0.79
1996	135,469	4853	5926	1073	0.79
1997	208,827	5615	6959	1344	0.64
1998	132,981	5711	6946	1235	0.93

The data in the above Table are revealing. Data collected through the very limited filaria control system show that each year 4000-6000 people with clinical disease are treated, even though the actual number of persons with microfilaremia is between 1000 and 1400. In other words, the disease is rampant, but the diagnosis must be clinically made and laboratory evidence is not always positive.

The personnel under the National Filaria Control Programme are involved in collection of blood smears, looking exclusively for microfilariae (but not for malarial parasites); they treat people with microfilaraemia with the antifilarial drug diethylcarbamazine (in parallel with malaria workers treating fever patients with antimalarial therapy); and they carry out anti-mosquito larval measures. Under the centrally sponsored programmes of malaria and filariasis, such vertical, parallel and exclusive operational schemes may be justified, but nothing prevents the State from utilising these inputs and resources and to weave them into one holistic vector-borne disease control strategy. A state owned integrated vector-borne disease control programme must be instituted.

On the whole, filariasis control is neglected as compared to malaria, both in planning and implementation. It needs priority in districts where its prevalence and incidence are high.

Japanese Encephalitis (JE) in Karnataka

In the 1950's JE was recognised only in northeastern region of Tamil Nadu and Pondichery. By the 1960's JE became prevalent in contiguous regions of Karnataka and Andhra Pradesh. In the 1970's JE outbreaks appeared in Assam, West Bengal, Orissa, Bihar and Eastern Uttar Pradesh. In the 1980's it appeared in parts of Maharashtra, Haryana and Punjab. In late 1980's and early 1990's JE has spread to western coastal regions such as Goa and Kerala. *Thus JE is today a widely prevalent problem in the country. Yet there is no defined policy or programme for its control either at the national level or state level.*

In Karnataka, JE outbreaks have been occurring periodically, annually in some cases, in the districts of Bellary, Mandya, Kolar, Raichur, Mysore and Bangalore Urban. However, this does not mean that all the other districts are free from the prevalence of JE. *JE is a problem of great public health importance since the victims are predominantly rural children, with high case fatality rates (about 30%) and high frequency of severe neurological handicaps as sequelae in those who survive.*

The current method of information collection is unsatisfactory. JE is diagnosed clinically, especially when outbreaks occur. In the experience of experts, such clinical diagnosis is fraught with risks of misdiagnosis. Treatable central nervous system infections (meningitis, brain abscess), and other diseases with encephalitis-like signs and symptoms (encephalopathies and septicaemias), etc. may not be investigated or diagnosed once the label of Japanese Encephalitis is given. Laboratory diagnostic services have to be made available at all levels of health care, so that all acute central nervous system infectious diseases will be properly investigated. To illustrate the diagnostic problem, the following table of Karnataka statistics is given in 5.3.

Table 5.3 : Japanese Encephalitis in Karnataka

Year	No. of reported cases	Death	No. of confirmed cases	Death
1994	125	47	-	-
1995	329	102	13	-
1996	127	17	44	-
1997	407	85	31	2
1998	209	38	97	12

As already stated, acute encephalitis should be included in the list of diseases for the district level Disease Surveillance. Diagnostic facilities must be established in at least one State Level Laboratory. The State Laboratory should establish linkages with District Laboratories/ teaching hospitals for training laboratory staff in Japanese Encephalitis diagnosis, supply of reagents and external quality assurance. The need for integrated approach for the monitoring, surveillance and control of vectors, both at larval and adult levels, has already been identified.

Dengue Fever in Karnataka

Dengue fever, a viral fever transmitted through the mosquito vector *Aedes aegypti*, is an increasing public health problem in South East Asia, including India. It is slowly beginning to occur and be recognized in Karnataka as shown in the table 5.4.

Table 5.4 : Dengue Fever in districts of Karnataka

Districts / City	1997		1999		2000	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Bangalore City	16	2	5	—	5	—
Bangalore Urban	28	—	1	—	9	—
Bangalore Rural	145	2	—	—	20	—
Kolar	69	—	6	—	67	—
Chitradurga	—	—	1	—	—	—
Dakshin Kannada	—	—	24	—	—	—
Bellary	—	—	—	—	2	—
Bijapur	—	—	—	—	3	—
Mysore	—	—	2	—	13	—
Mandya	3	—	—	—	—	—
Tumkur	—	—	—	—	16	—
TN / AP cases in Karnataka	—	—	—	—	5	—
Total	262	4	39	—	140	

These are underestimates, because some are asymptomatic and most patients with undifferentiated fever are not advised investigations. Dengue hemorrhagic fever (DHF) and Dengue Shock Syndrome (DSS) are more serious forms and were reported in the 1996 outbreak in Delhi.

Control measures

Control measures should be part of the integrated vector borne disease control package, through the general health service. The vector, *Aedes aegypti* should come under entomological surveillance and control. Objects that collect water such as old tyres, tins, jars / bottles, coconut shells etc need to be disposed off. Water should be changed regularly in water coolers, tanks, vessels etc. Health education for administrators, medical and paramedical workers and for students and the general public should be given through the mass media.

Recommendations

Institute an integrated approach to vector-borne disease control programme, with the following components:

- *Use a mix between bioenvironmental and chemical methods for vector control (source reduction, larva control, ensuring regularity and continuity. Adequate trained entomological support to be provided.*
- *Health promotion and social mobilisation, starting especially with taluks and urban areas, with higher incidence/ prevalence rates.*

- *Establish control measures for Japanese Encephalitis and Dengue fever / Dengue Haemorrhagic Fever and Dengue Shock Syndrome in addition to ongoing programmes for malaria, filaria and KFD.*
- *The State Surveillance Laboratory to also become a Reference Laboratory for mosquito borne infections and other communicable diseases of public health importance.*
- *The Epidemiological Surveillance System to cover these diseases and allow for rapid analysis at district level. Regular epidemiological mapping of vector borne diseases to be used to modify and plan strategies. The epidemiological surveillance strategy must have a strong entomological component.*
- *Diagnosis and treatment programmes to integrate with general health services at primary care level, with specialised public health support at taluk, district and state level.*
- *Training, regulation of prescribing practices and involvement in surveillance system of the private practitioners. Drugs available under the programme may be given to them, on condition they provide free treatment and record and report cases.*
- *Evolve new partnerships with communities, NGOs, general practitioners, the private sector, the educational network of schools and colleges and with various other inter sectoral departments to enhance their involvement in the integrated vector borne disease control programme.*
- *Guidelines have been drawn up at country level for all these areas of focus by a policy resource group based in the state (CHC) along with NAMP and WHO-SEARO. These need to be operationalised in the state, in the districts where the magnitude of the problem is greatest.*

KYASANUR FOREST DISEASE

Kyasanur Forest Disease (KFD) is a haemorrhagic fever found in a restricted part of Karnataka caused by KFD virus and transmitted to man by the bite of infective ticks. KFD was first recognized in 1957 in Kannur village, Soraba taluk, Shimoga district of Karnataka State. Local inhabitants called it the "Monkey disease" because of its association with dead monkeys. The disease was later named after the locality – Kyasanur Forest – from where the virus was first isolated.

Epidemiological Features:

- a) **Agent:** The agent KFD virus is a member of Group B Arboviruses (Flavivirus). The monkeys are recognized as amplifying hosts for the virus. They are not effective maintenance hosts because most of them die from KFD infection. Small mammals particularly rats and squirrels are the main reservoirs of the virus. Deforestation due to dams and commercial felling of trees has made the monkeys move out of their habitat and spread the disease.
- b) **Vector:** Transmitted by the hard ticks of genus *Haemaphysalis*, particularly *H. spinigera* and *H. turtura*. The disease is transmitted by the bite of infectious ticks especially nymphal stages. Cattle provide the ticks with a plentiful source of blood meals, which in turn leads to population explosion among the ticks. Thus cattle are very important in maintaining tick population but play no part in virus maintenance.
- c) **Host factors:** Majority of affected cases are between 20 and 40 years with a greater attack rate in males. The patients are mostly cultivators who visited forests accompanying their cattle or for cutting wood. There is no evidence of man-to-man transmission.

The highest number of human and monkey infections occur during drier months, particularly from January to June. This period coincides with the peak nymphal activity of ticks. Human activity is at its peak in the forest at the same time i.e., until the onset of rains in June.

The Case Fatality rate has been estimated to be 5-10%. Diagnosis is established only after detecting the presence of virus in blood and / or serological evidence. Currently the health authorities are using animal inoculation techniques for confirmation of diagnosis, which takes a minimum period of one month and is outdated. They should shift to latest methods like ELISA for confirmation.

Situation Analysis

Earlier the disease was found to be limited to an area around the original focus (Shimoga district) covering about 800 Sq.km. Currently the disease is restricted to four districts – Shimoga, Uttara Kannada, Dakshina Kannada and Chikkamagalur covering over 6000 Sq.km.

The disease continues to be active in its endemic foci. The outbreak during 1983-84 was the largest with 2167 cases and 69 deaths.

The reported number of cases and deaths due to Kyasanur Forest Disease from Karnataka State in 1991-2000 is shown in the table 5.5.

Table 5.5 : Kyasanur Forest Disease

Year	Cases	Deaths
1991	940	15
1992	1171	5
1993	699	3
1994	110	0
1995	174	3
1996	140	3
1997	75	4
1998	298	1
1999	159	-
2000	142	6

Surveillance

The Department of Health and Family Welfare has established field stations at Sagar, Honnavara, and Belthangadi for carrying out disease surveillance. This is monitored by the Deputy Director, Virus Diagnostic Laboratory, Shimoga and the respective District Health and Family Welfare Officers. The surveillance programme includes human case detection, blood sample collection from acute and convalescent cases, investigation of monkey deaths, entomological survey and virus isolation.

Treatment

There is no specific treatment for Kyasanur Forest Disease. Treatment is symptomatic; hospitalization and bed rest, correction of fluid balance, antipyretics, prevention of secondary infection and blood transfusion in bleeding cases.

Preventive Measures:

1. Control of Ticks:

For control of ticks in the forest, application can be made by power equipment or aircraft mounted equipment to dispense Carbaryl, Fenthion or Propoxur at 2.24kg of active ingredient per hectare. The spraying must be carried out in "hot spots", i.e., in areas where monkey deaths have been reported (within 50m around the spot of monkey deaths), besides the endemic foci.

Since the heavy tick population in forest areas is attributed partly to the free roaming cattle, restriction of cattle movement is thought to bring about a reduction in vector population. The Health Department has been applying 50% Benzene Hexachloride on cattle once in a week during the monsoon season. Cattle spraying have been stopped since 1997 because of the harmful effects of BHC.

2. Vaccination:

The population at risk should be immunised with killed KFD vaccine. It is given in two doses at an interval of 4 weeks by subcutaneous route. The dose is 1ml for adults and 0.5ml for those below 8 years of age. Booster dose is given in 3rd and 5th year. The vaccine is currently manufactured at KFD Vaccine Production Unit located in Mc Gann Hospital Campus, Shimoga. Currently the vaccine production is around one lakh doses per annum. The existing infrastructure and resources are unsuitable for vaccine production. Much attention should be paid to quality testing, safety and potency of the vaccine.

3. Personal Protection:

Protection of individuals exposed to the risk of infection by adequate clothing and insect repellants such as Dimethylphthalate (DMP) should be encouraged. They should examine their bodies at the end of each day for ticks and remove them promptly. They should be advised to have a bath and wash their clothes in hot water after returning from the forest. The habit of sitting or lying down on the ground should be discouraged. People should be advised not to go into the forest areas where monkey deaths have been reported.

Recommendations

- *Anticipatory vector control measures in the forest periphery and high-risk villages especially from January to June. Regular insecticide dust application should be carried out in the hot spot areas.*
- *Restriction on movement of humans and cattle in the forest areas where monkey deaths have been reported.*
- *Strengthen the existing disease surveillance system for KFD so that every case of human infection or monkey death is reported and investigated. Entomological, epidemiological and serological surveillance should be undertaken in new areas bordering the affected districts.*
- *Health education regarding the transmission and spread of the disease, restriction of cattle movement, adequate personal protection through the Health Department and Panchayat system.*
- *Vaccination of the population at risk. Production of enough quantities of KFD vaccine and timely supply through cold chain..*
- *The latest methods for diagnosis like ELISA test should be introduced instead of the outdated methods like animal inoculation. All the KFD field stations should have diagnostic facilities.*

5.4.2 TUBERCULOSIS

The evolution of the National Tuberculosis Programme (NTP)

Tuberculosis was recognised as a major public health problem by the newly independent Government of India in 1947 and steps were initiated towards its control, given the knowledge and technology of the time. The national BCG inoculation programme was launched given the understanding that BCG would protect from infection, as well as from latent infection progressing to bacillary pulmonary TB, which is the source of infection to fresh individuals, most often children and youth. Shortly after, a prospective longitudinal study was established under the ICMR to investigate the protective effect of BCG. This study, conducted in Chingleput, Tamil Nadu, was reported in the late 1970s and showed that the assumption that BCG would offer protection from infection or from disease progression was incorrect. In summary, BCG has no role as a public health intervention as it does not protect against adult pulmonary TB.

Recognising the immensity of the burden of disease and numbers of death due to TB, the National TB Programme (NTP) was established in 1962 based on research proving the effectiveness of domiciliary treatment and on sociological, epidemiological and operations research which established the rationale of passive case detection, the efficacy of sputum microscopy, the expected case load, and the need for integration of the programme into the general health services. TB is widespread and distributed in both rural and urban communities with a few patients (10-12) in every village. They need access to services as close to their homes as possible. Hence the need to develop adequate diagnostic and therapeutic services at primary health centres. In fact certain core principles of the primary health care approach were developed by the NTP. Several obstacles and competing interests adversely affected implementation of the NTP in India. However, it was accepted by the WHO and implemented successfully in several countries, including some developed countries.

In India it was a centrally sponsored program on 50:50 basis. The Central Government provided all costs for drugs, and the State met the costs of implementation and administration. The achievements of NTP included the establishment of 446 District TB Centres, 330 TB Clinics, and over 47,000 hospital beds for TB. In 1992, a review of the NTP, supported by WHO and Swedish International Development Association (SIDA), concluded that the NTP had not achieved the desired impact on TB in India. The treatment completion rate was estimated to be only 30%. This reiterated findings and conclusions of earlier evaluation by ICMR and by reports from NTI and the TB Association of India.

Reasons for failure included:

- inadequate budgets;
- lack of coverage in some parts of the country;
- shortage of essential drugs;
- varying standards of care in various centres;
- poor administration;
- unmotivated and unevenly trained staff;
- poor quality sputum microscopy;
- focus on case detection without accompanying emphasis on treatment outcomes.

However, underlying political economy factors and policy process factors were not considered by the largely techno-managerial approach.

Consequently, the Government of India designed a revised TB Control Strategy, in 1993. This strategy was pilot tested in a population of 2.35 million, and was extended to cover 13.85 million, in 13 States. In these areas under study conditions, and with much national and international attention, the diagnostic practice improved and cure rates more than doubled. Based on this experience, the Revised National TB Control Programme (RNTCP) was formally launched in India on March 26, 1997, with the plan to increase the area under coverage in a phased manner. This was supported by a soft loan (USD 142.4 million) from the World Bank, with a target to cover 102 Districts with 271.2 million people. The goal of RNTCP is to detect at least 70% of sputum positive pulmonary TB cases and to cure at least 85% of them, for the purpose of breaking the process of transmission. Treatment is by the **Directly Observed Therapy, Short course (DOTS)**.

The situation of TB control programme in Karnataka

In Karnataka, RNTCP was introduced in 1994 as phase 1 Pilot Project, in 3.5 lakh population in Bangalore city, and expanded to cover the entire City Corporation (1998 October) and to the entire Bangalore Urban District (1998 November). RNTCP was extended to one more district in 1998, and was expected to extend to seven more districts in 1999. The following Table 5.6 gives the planned coverage of all districts, vis-a-vis RNTCP.

Table 5.6 : Districts covered by RNTCP

1998	1999	2000*	2001*
Bangalore (U) Bangalore ®	Bellary Bijapur Bagalkot Chitradurga Davangare Raichur Koppal	Belgaum Bidar Dharwad Gulbarga Gadag Haveri Mandya Kolar Tumkur	Chikmagalur D. Kannada Udipi U. Kannada Hassan Kodagu Mysore Chamarajnagar Shimoga.

* yet to be covered under RNTCP

* The performance in Bangalore city in phase one was much below other pilots and with very low case detection. The expansion to other districts is also at a slower pace than planned, and Karnataka is currently placed as the second worst performer in the country in the RNTCP. Its performance has been rated as unsatisfactory by the recent World Bank review.

Problems of TB control: national overview

The South East Asia Office of the WHO has published a monograph on TB in India, in 2000 (*Research for Action. Understanding and Controlling Tuberculosis in India*. World Health Organisation, Regional Office for

South East Asia Region, New Delhi, 2000). The situation in India in general and in Karnataka in particular, is not satisfactory. The WHO has estimated that the annual gross economic loss for India, on account of TB is about 13,000 crores of rupees. In addition, TB patients spend, from their own resources, 645 crores of rupees, annually. Other studies report indebtedness and impoverishment resulting from out of pocket spending for TB treatment. Some 300,000 children lose both parents due to TB, and become orphans, annually. The situation is rapidly deteriorating, on account of the increasing prevalence of HIV infection and AIDS. To cite one representative study from a public hospital in Mumbai, the frequency of HIV infection in patients with TB rose from 2% in 1988 to 16% in 1998. TB has been found to be the most common major secondary disease in symptomatic HIV disease (otherwise, AIDS). The widespread use of anti TB drugs in an inefficient manner, the continued transmission of infection from partially treated patients and the combination of HIV and TB are all factors that might contribute to the emergence of drug resistance in TB, making the future control of TB even more problematic and very expensive.

India has an estimated 1,799,000 cases of TB, an incidence of 187 new cases per 100,000 population and 805,000 new total annual case burden. Yet, in 1997, only 7,708 cases were under DOTS. We get an idea of the magnitude of our failure when we compare this last figure with 147,905 under DOTS in China, 19,492 in Indonesia, 25,871 in Bangladesh and 15,753 in Ethiopia. It points to the urgent need for improvement in the health system, for better supervision and for good leadership of TB control at national, state and district level! Apathy, disinterest and non-performance in regard to TB care are widely prevalent. The following paragraphs are quotations from the WHO SEARO publication, 2000.

“All too often, health providers fail to diagnose the disease correctly, thereby delaying the start of treatment and perpetuating in the community. Many providers do not confirm their diagnosis of pulmonary TB by sputum examination relying instead on just radiograph and thus often incorrectly diagnosing patients to have TB. In one study in Bombay only 39% of doctors used sputum examination to confirm the diagnosis in TB. Studies in Karnataka, Delhi and Tamil Nadu revealed that, even after the multiple visits less than one third of patients had undergone even a single sputum examination, despite spending 1-6 months of their income. In rural areas lack of effective diagnosis and treatment was even more pronounced”.

“Even when TB is diagnosed by private practitioners, prescribing practices vary widely. A study of 100 Private doctors in Bombay found that there were 80 different regimens most of which were either appropriate, expensive or both; in the similar survey in Pune 113 doctors prescribed 90 different regimens (Uplekar and Shepard. *Tubercle* 1991; 72: 284). Private doctors seldom felt that it was their duty to educate the patient about TB and never made attempts to contact or trace patients who had interrupted treatment (Khatri. *Indian Journal of Tuberculosis* 1999; 46:157); virtually no individual patients' records are maintained by private practitioners”.

“In one recent study, researchers interviewed several 100's patients and their families and found that most patients felt uncomfortable talking about TB, several patients denied that they were suffering from the disease, are taking treatment for it, and some even refused to mention TB by the name. Patients frequently attempted to hide their disease from their family and community by registering under false names at TB clinics are by denying their identity when confirmed to their interviewers”.

“Estimates in India indicate that of every 100 infectious TB cases in the community, about 30 are identified in public sector, of which at most 10 are cured. Similarly about 30 are identified in the private sector, of which at most 10 are cured. Hence not more than 20% of patients who developed TB in Karnataka in each year are cured. Many of the remaining patients remain chronically ill, or die slowly from the disease, infecting others with strains (of TB bacilli) which may have developed drug resistance”

Problems of TB control : Karnataka

The WHO monograph and several studies and reports have identified the problems of poor quality in diagnosis and treatment of TB in Karnataka. The health seeking behaviour of 'chest symptomatics' is very interesting and illustrative.

The vast majority of patients with chronic cough seek care quite promptly, as shown in the Table 5.7.

Table 5.7 : The proportions of chest symptomatics seeking care in public or private facilities.

	Mysore		Raichur	
	Rural %	Urban %	Rural %	Urban %
Private provider	48	76	93	74
Government facility	51	22	5	25
Other	1	2	2	1
Total taking action	83	85	90	85
Not yet taking action	17	15	10	15

That chest symptomatics seek treatment early was recognised by NTI studies in the early 1960s, along with findings regarding the failure of the medical profession and the health system to be able to diagnose TB early. While expansion of the private sector, and poor performance by the public sector, has shifted care seeking behaviour to the private sector, the latter is equally poor in rational treatment of TB and in achieving cure, though their services are more expensive.

Unqualified rural practitioners are the first point of contact for most rural patients. Many patients, rural or urban, spend a great deal of time and money "shopping for health" before they begin treatment. Very often, they do not receive either accurate diagnosis or effective treatment, despite spending considerable resources.

The annual statistics of diagnosed pulmonary TB in Karnataka are presented in the following Table 5.8..

Table 5.8 : Tuberculosis diagnosed in the State.

Year	No. of Sputum tested	No. of TB cases detected	TB cases as % of sputum tested	Decline of TB since last year (%)
1996	243,405	81,785	33.6	-
1997	241,590	80,028	33.1	2.1
1998	314,671	71,666	22.8	10.5
1999	261,756	66,976	25.6	7.5

The above table suggests that the annual numbers of new TB (pulmonary, bacillary) cases detected through the TB control programme is in the range of 70,000-80,000. However, during 1997 (April) to 1998 (March) the total number of sputum positive cases under therapy was 174,594.

These numbers are underestimates of the total number of TB cases in the state because of the following reasons:

- in many teaching and private hospitals, pulmonary TB is diagnosed using chest X-Ray, without testing the sputum; these patients are not included in the state statistics because they have not been classified as sputum smear positive;
- the RNTCP with emphasis on more intensive case detection is operational in only some districts;
- TB cases diagnosed outside the TB control programme are not included in the statistics.

No conclusions can be drawn based only on routine statistics because of incompleteness and issues of validity.

A deficiency under the TB control programme is the lack of assessment of the incidence and prevalence of TB infection in childhood. Trends in the Annual rate of Infection indicate the dynamics of the TB epidemic. One of the parameters of TB control status is the prevalence of TB infection (as positive PPD reaction) of less than 1% at 14 years of age, though this was arrived at entirely arbitrarily. However the current prevalence of TB infection at 14 years of age has not been measured. The earlier assumption that BCG inoculation would be protective has been disproved in the ICMR Chinglepet study. Widespread use of BCG of course affects Mantoux testing and measuring of annual rates of infection.

From among the pool of infected children approximately 10% are estimated to develop bacillary pulmonary TB during their adult age. The premise of TB control is that transmission of infection to children and others will be drastically reduced if the majority (70%) of TB cases particularly bacillary pulmonary TB are diagnosed and a majority of them (80%) are made noninfectious by multi drug therapy. It has already been pointed out that there is delay in diagnosing TB in symptomatic patients. Again in many cases there is delay of starting treatment once sputum is found positive. These delays result in susceptible contacts getting infected with TB bacilli.

The extreme urgency for effective TB control in Karnataka

HIV infection is spreading in the state. Currently it is estimated that 1% or more adults in the sexually active age group are already infected. A majority of adults are already infected with TB bacilli. HIV infection accelerates the development of disease due to TB. It is estimated that, among HIV infected persons the annual risk of TB disease (among those latently infected) is 10% per annum, as against the lifetime risk of 10% among those without HIV infection. Thus the prevalence of bacillary TB will increase due to the epidemic of HIV infection. Indeed there is evidence to show that such increase has already begun in some parts of the country.

Another reason for the urgency is the increase in drug resistance recently being reported among isolations of *Mycobacterium tuberculosis*. We have been warned that "unknowingly we are transforming an eminently treatable disease into one which is life threatening and exorbitantly expensive to treat" (Jain.N.K. Indian J Tubercul, 1992;92:145-48)

Recommendations

- *The quality of implementation of the Tuberculosis control programme in all districts, including urban areas, under both the National Tuberculosis Programme (NTP) and the RNTCP needs to improve within the next year. All staff involved will need to be held accountable for non-performance. The most important level of service delivery are the primary health centres which should provide access to good quality TB care for all. For this, it is necessary to have,*
 - a. *laboratory technicians, whose skills are updated and whose slides are cross checked regularly;*

- b. *microscope, stains, all records and registers;*
- c. *uninterrupted drug supplies;*
- d. *medical officers who are trained by the District TB officers regarding the organisation and functioning of the NTP/RNTCP;*
- e. *most important, there is need for close supportive supervision from the taluk health officer and DTC in particular with problem solving in the field;*
- f. *all peripheral health institutions should be "implemented" under the NTP.*
- *The District TB Centre should function as they were originally envisaged, with a qualified person in public health or with a diploma in TB and chest diseases. DTOs should undergo the training at National Tuberculosis Institute (NTI). Two medical officers are required at the DTC – one to run the clinical service and the other to undertake training in the field and to analyse reports etc. The DTC is the referral centre for all aspects of the NTP/ RNTCP and should undertake orientation and training of institutions and General Practitioners in the private, voluntary and public sector regarding the programme. A medical college department cannot replace the DTC.*
- *The state should work towards*
 - a. *Increased case detection to 75% of expected cases. This will include cases detected by the public, private and voluntary sector for which a system of notification may be required. The expected number of cases may also have to be recalculated based on recent epidemiological data. Targets should not be used.*
 - b. *Early case detection, with an emphasis on sputum microscopy for diagnosis. The use of x-rays should be rationalised to reduce over diagnosis and unnecessary treatment. There should be an acceptable ratio between sputum positive and sputum negative cases (1:1).*
 - c. *Completion of treatment with cure rates (measurable in sputum positives) of at least 85%. Two drug regimes should be discontinued.*
- *Recording, reporting and analysis at DTC level to be used for monitoring and planning the programme.*
- *Paediatric dosage forms of drugs to be made available. Anganwadis could be centres for follow-up of young children with TB.*
- *Supervised or directly observed therapy to be used only when necessary. Active involvement of patients and their families in the treatment process with adequate patient education.*
- *The State TB Centre to be a model centre that is also used for training and operational research, including social science research into patients and peoples' perspectives. Networking and training with NGOs and the private sector to be facilitated by this unit along with the Karnataka State TB Association.*
- *The state should make greater use of the services and advice of the National TB Institute.*
- *Given the co-infection of HIV and TB, training for physicians and health personnel regarding specifics of presentation, access to treatment, developing working links with the Karnataka State AIDS Society.*
- *The State TB Society should include professionals and NGOs and regularly (annually) review the implementation of the programme.*

5.4.3 VACCINE-PREVENTABLE DISEASES

Introduction

It is well known that 'variolation' was practiced in India and China during the 16th century, as a preventive measure against smallpox. Two principles were inherent in this practice:

- a) infection with the causative agent of Smallpox protected against subsequent occurrence of the disease.
- b) the inoculation of the smallpox agent through an 'unnatural' route (skin versus respiratory) caused a mild disease, in most instances. However, variolation did cause full fledged smallpox in a few cases. Obviously the seed of the concept of immunisation was present in our country long before it was scientifically developed and promoted in other countries.

In 1798, Edward Jenner proved by experimentation, that cowpox inoculation prevents smallpox. Using the Jennerian vaccination in a strategic manner, smallpox was eradicated globally, by early 1970's. The power of immunisation in public health was thus proven beyond doubt. Consequently the World Health Organisation designed and promoted the Global Expanded Program on Immunisation (EPI), in 1974, to protect the under-5 children of the world from six specific diseases against which safe and effective vaccines were already available. They are BCG (against childhood tuberculosis), Diphtheria, Pertussis, Tetanus (DPT) vaccine, oral polio vaccine (OPV) and measles vaccine.

India adopted EPI in 1978 / 79 and made it a Centrally sponsored project. Either the Government of India or donors, especially UNICEF, provided full funding for training of personnel, cold chain equipment and procurement and supply of vaccines. Initially India accepted BCG, DPT and OPV in EPI, but not measles vaccine. Instead, typhoid vaccine was included, but discontinued within a few years. In 1985 India accepted measles immunisation making India EPI on par with global EPI.

In 1985 India modified the EPI plan under the name Universal Immunisation Programme (UIP). Under UIP the target was set to cover 100% of infants with the 6 vaccines, as against the 80 or 85% target under EPI. By 1990, all districts in the country came under UIP. In that year Karnataka also adopted UIP in all districts.

Situation Analysis

The Universal Immunisation Programme, although a major success story, remains an unfinished story. Under this programme, BCG (1 dose), DPT (3 doses in infancy and one in 2nd yr), OPV (3 doses in infancy and one in 2nd yr), Measles vaccine (1 dose in infancy), and DT (at 4-5 yr) are given free of charge. Pregnant women are given TT (2 doses in first pregnancy and 1 dose for subsequent pregnancy) in order to prevent neonatal tetanus. TT is also included in school health (2 doses at grades 5 and 7).

The official reports show over 100% coverage for all vaccines (Health Dept. Annual Report, 1998-99). Independent assessment indicates that Karnataka is in the bracket of 60-80% for fully immunised children (BCG, DPT3, OPV3, Measles) in the 12-23 months age group and also in the 24-35 months age group (Government of India, MoHFW, Evaluation of Routine immunisation 1997-98). The coverage for measles vaccine was assessed to be only 52% (Human Development in Karnataka 1999, p25). The following data are quoted from the National Family Health Survey -2, for the year 1998-99.

The immunization coverage data of the 4 southern States and Maharashtra are presented below in the Table 5.9.

Table 5.9 : Percentage vaccinated.

State	BCG	DPT 3	OPV 3	Measles	All	Card available
Maharashtra	93.7	89.4	90.8	84.3	78.4	48.9
Andhra	90.2	79.5	81.6	64.7	58.7	41.3
Tamilnadu	98.6	96.7	98	90.2	88.8	45.8
Kerala	96.2	88	88.4	84.6	79.7	63.2
Karnataka	84.8	75.2	78.3	67.3	60	41.2

It may be seen from the above Table that the overall performance of our State has been the lowest among the cluster of the five contiguous States. It is worth reminding ourselves that in 1992, when Karnataka adopted the 'Child Survival and Safe Motherhood' programme, the targets to be achieved by 2000 included 100% fully immunized children. Again, in 1994, The State Programme of Action for the Child accepted the following goals for the year 2000.

- Immunisation : 100% coverage for each antigen
- Neonatal tetanus : complete elimination
- Measles mortality : complete elimination
- Polio : OPV 3 coverage 100% and polio-free status throughout the State

Among the above goals, only the elimination of polio is being achieved, but it was not through routine immunization coverage reaching 100%, but by the additional repeated annual pulse immunizations. In 2000 there were only 8 wild poliovirus isolations in the entire State of Karnataka and it is safe to assume that they were the very last cases in the State.

The percentages of antenatal women receiving two doses of Tetanus Toxoid in these States were: Maharashtra 74.9; Andhra 81.5; Tamilnadu 95.4; Kerala 86.4 and Karnataka 74.9 (NFHS-2). Having achieved only less than 70% measles vaccine coverage, and 75% coverage with Tetanus Toxoid in pregnancy, it is most likely that the goals of elimination of measles mortality and neonatal tetanus have not yet been achieved in Karnataka.

It must be pointed out here, that the vaccine coverage data represent only a measure of the efficiency of the inputs. The actual output of the immunization effort, or its outcome, is the degree of reduction of the incidence of target diseases, the so-called vaccine preventable diseases. This deficiency in the system, namely the lack of monitoring of the incidence of the vaccine-preventable diseases, needs to be corrected. Only in the case of polio vaccination for the eradication of polio, has an excellent system of surveillance been built up. This system has two components. The first is clinical; every case of acute flaccid paralysis is now being reported to the designated agency. The second is virological; every case is investigated by collecting two sequential samples of stools and sending them to a designated virus laboratory. The designated laboratory for Karnataka is the ICMR laboratory in the Bangalore Medical College. Obviously, we need clinical surveillance for all vaccine-preventable diseases and also sufficient laboratory expertise and capacity to investigate such diseases when they do occur.

As discussed in their respective sections, rabies and Kyasanur Forest Disease are also vaccine preventable diseases. Both these vaccines are manufactured in Karnataka State and the State is self-sufficient in this regard. However, the rabies vaccine made and used in Karnataka is obsolete and we must replace it with the more modern and safe rabies vaccine, like in other countries.

Newer vaccines and new developments in vaccines

Some newer vaccines have been available for quite some time, both in other countries as well as in India, but we do not have a mechanism to assess their epidemiological need or priority for inclusion in the immunisation programme. Such vaccines include mumps and rubella vaccines (combined into one Measles-Mumps-Rubella vaccine, MMR), Hepatitis B, *Haemophilus influenzae* type b (Hib), Hepatitis A, varicella (chickenpox), the oral and the Vi typhoid vaccines and the Japanese Encephalitis vaccine. The old-fashioned whole cell killed typhoid vaccine is safe and effective, but the Government of India has been discouraging its manufacture in India in order to promote the importation of the oral vaccine and importation and indigenous manufacture of the Vi vaccine.

In the near future, sooner than later, there will be a global review of the choice between OPV and the inactivated polio vaccine (IPV). A childhood vaccine against pneumococcal diseases (pneumonia, meningitis, otitis media) has recently been licensed in North America and some European countries. Studies are taking shape to evaluate two Indian strains of Rotaviruses as candidates for vaccine. One of these is from Bangalore itself. Having realized that immunization is a powerful tool of public health, for the prevention of an increasing number of diseases, which can be reclassified as vaccine preventable diseases, we do need a practical and effective mechanism to assess the epidemiological need, effectiveness, safety, cost-benefit and priority of each such vaccine.

The Indian Academy of Pediatrics has included Hepatitis B vaccine and MMR in their immunisation schedule recommended for children attending the private sector health clinics. IAP has strongly recommended to the Government of India to include Hepatitis B vaccine in the Universal Immunisation Program. Hepatitis B virus infection is very common, but silent in children. Consequently, many infected children grow up as chronic virus carriers, contributing to the already large pool of infected persons, estimated to be 45 million nationally and 2.7 million in Karnataka. A recent study in Karnataka has confirmed the prevalence of Hepatitis B virus carrier state to be in the range of 3-5% even in children (Indian Pediatrics 2000; 37:149). Most of the consequences of chronic infection (chronic hepatitis, cirrhosis of liver, hepatocellular carcinoma) are manifested in adults. While chronic hepatitis carries with it serious and disabling morbidity, once cirrhosis or carcinoma sets in, the condition is almost universally fatal. Consequent to the large pool of infection, acute infection continues to occur in children and adults. Acute Hepatitis B is a major cause of acute fulminant hepatitis among adults. All these conditions are vaccine preventable.

The Indian Academy of Pediatrics has also recommended to the Government of India to abandon the manufacture of sheep brain rabies vaccine and to replace it with the safe cell culture rabies vaccine; to ensure the continued availability of the typhoid vaccine; and also to establish an Advisory Committee on Immunisation Policies and Practices at the National level. All of these issues are equally relevant in Karnataka State also.

Strengthening UIP for 21st Century

There are four issues to be addressed here, in the light of the statements above: first, to improve the efficiency of the routine immunisation programme; second, to monitor the outcome of the immunization efforts by disease surveillance; third, to evaluate the need and priority of newer vaccines; and fourth, to evaluate the efficiency and quality of vaccine manufacture within the State. The needed dialogue and deliberations over the above issues is not a one-time affair, but an on-going necessity, for which a mechanism needs to be designed

and established. A State level Advisory Committee on Immunisation Policies and Practice is necessary to fulfill this need.

1. Improving the efficiency of UIP

Karnataka must aim to achieve near 100% coverage with the 6 EPI vaccines in all communities, rural and urban. This requires special attention, planning and close monitoring of the UIP in all villages, panchayats, taluka, Districts and cities. There is great potential for public – private participation, with the UIP supplying vaccines to private agencies, who in turn shall return beneficiaries list and utilization reports to the immunisation programme officer in the locality.

2. Monitoring outcome of Immunisation programme

The true outcome of our immunisation programme includes a sustained reduction in the incidence of the target diseases, and also the creation of demand by the community for perpetuating the programme. The former is not being measured; the latter has not been achieved as shown by the difficulty in obtaining high enough vaccine coverage levels. Thus, a successful disease surveillance system must include vaccine-preventable diseases, in order to measure the fall in disease incidence. The occurrence of even one case of a vaccine preventable disease is to be investigated. Whenever a vaccine preventable disease is reported anywhere, that information must be made available to the health system. It could have been due to non-immunisation or due to vaccine failure. So we need to know the immunisation history of the subject. Non-immunisation identifies inadequate coverage, whatever the coverage statistics has been. Remedial measures must now be taken. Vaccine failure indicates either poor quality vaccine or inherent property of that vaccine with lower than 100% efficacy. Many cases of failure would suggest quality problem when we know the accepted vaccine efficacy level. In such a situation, vaccine potency must be checked. In short, not to have a disease surveillance programme is unacceptable from the viewpoint of management principles.

3. Evaluating and introducing newer vaccines

Regarding the introduction of newer vaccines, we must assess the actual need based on epidemiology of the target diseases, and the availability and affordability of such vaccines. All newer vaccines are relatively more expensive than the classical ones. That is partly because they are the products of heavy investments in research, some patented. The production costs of newer vaccines tend to be high, and the number of manufacturers are usually few, and their competition low. Rich countries have been quick to introduce inspite of their high cost. Even for the classical vaccines, the prices are higher there than in developing countries. So, they are able to absorb the newer vaccines more readily as they understand the economic value of preventing diseases. In poorer countries the newer vaccines tend to be private market vaccines. Therefore the companies have to promote the products, stock them at their risk, market is not assured and for all these and also for quick profit they are sold at very high prices. They must make their profit even when the quantum sold is not very high. These are ground realities. So, when the government considers the introduction of a new vaccine, it has to ponder over the financial implications very thoroughly.

There are two basic principles we must recognize. One, when the government assures a market, and endorses it, the prices tend to crash. In 1984, measles vaccine was being sold at Rs 40 per dose. When it was approved in the national immunisation programme, the price fell to Rs. 5 per dose. Some neighbouring countries are purchasing HB vaccine for less than Rs. 30 per dose, while in India the open market price is well above Rs. 70 per dose for multidose vials and over Rs. 100 for single dose vials. In a State programme, with open tender, or UNICEF tender, we must be able to get HB vaccine at Rs. 25-30 per dose. Fortunately there are a number

of manufacturers of Hepatitis B vaccine and there is a healthy competition in the market among several suppliers, including at least two excellent Indian manufacturers. This same principle will apply to several newer vaccines.

The second principle is the question as to whether it is the Government's responsibility to supply free vaccines to all children, rich and poor. In public sector institutions they must be made free, or heavily subsidized, for the coverage of the clientele that use these institutions for their health care needs. Perhaps we can build a case for the Government not providing the newer vaccines to those who can afford to pay for them. Thus, in private sector institutions these vaccines could be sold, at market prices. It is possible that the vaccine prices may not fall so drastically if a large chunk of private marketing is allowed side by side with free supplies. This dichotomous financing system for vaccinations has to be carefully thought through by the Government economics experts alongside with the health care experts.

As already highlighted, Hepatitis B virus infection is frequent, but children seldom suffer from overt disease. Virus carriers with chronic infection develop chronic active hepatitis, cirrhosis or liver cancer. Although we do not have quantified data on the burden due to these liver diseases, we do know that 4-5% of the population are virus carriers and that the lion's share of carrier state begins in newborn period and early childhood. Thus, prevention with vaccine has to be addressed in childhood, preferably starting in the newborn period. The Task Force recommends the inclusion of HB vaccine in the State immunisation programme. This recommendation is actually an endorsement of the recommendations already made by the Indian Academy of Pediatrics and the WHO.

4. Vaccine manufacture in the state:

There are two vaccine manufacturing units under the Karnataka Government. They are Vaccine Institute (Rabies vaccine unit) at Belgaum and KFD vaccine Unit at Shimoga. The quantities of vaccines produced in these units are given in the table 5.10.

Table 5.10 : Vaccines produced in Karnataka

Year	Rabies vaccine (ml)	KFD vaccine (ml)
1993	27,50, 640	43,650
1994	27,77,356	NA*
1995	22,13,700	29,380
1996	27,78,900	18,210
1997	32,62,460	8,000

*NA: not available

Some of the problems faced by these vaccine units is the lack of modernization and lack of Research and Development. The sheep brain rabies vaccine is becoming obsolete and it will have to be replaced with safe and effective cell culture vaccine. The Task Force suggests that the Department of Health and Family welfare explores the possibility and potential of introducing all vaccine manufacture, against rabies and KFD, with the Department of Animal Husbandry which already has vaccine manufacturing activities for veterinary needs. A technical steering committee is suggested for working out the details.

Rabies as a vaccine preventable disease

Rabies is also a vaccine preventable disease. A detailed account of rabies and its prevention is given in section 5.4.7. The currently used vaccine, the sheep-brain grown, inactivated, rabies virus vaccine is effective for preventing rabies, but it is not a safe product for human use. It is manufactured in the public sector Rabies Vaccine manufacturing unit at Belgaum. Currently, Karnataka is self sufficient for rabies vaccine for the needs of the public sector health care institutions. However, most, if not all, private sector institutions give only cell culture vaccines. There are several such vaccines available commercially.

The Task Force has explored the possibility of manufacturing cell culture rabies vaccine, either in Belgaum or in Shimoga. However, neither centre has an R & D background, nor modern facilities for cell culture or the leadership and expertise to develop these. Yet the Task Force wishes that Karnataka remained self sufficient for rabies vaccine. The Task Force expects that the modern, safe and highly effective cell culture vaccine will soon replace the old-fashioned sheep brain vaccine.

One realistic possibility is to join forces with the Department of Animal Husbandry which already has good facilities for manufacturing vaccines for veterinary use. A Technical Steering Committee may be appointed for an in-depth analysis and recommendations, to be ready within 6 months.

Karnataka's own vaccine-preventable disease - KFD

A detailed account of Kyasanur Forest Disease is given in section 5.4.1. An infant-mouse-brain grown and inactivated KFD virus vaccine was indigenously developed and is being manufactured in the KFD unit in Shimoga.

The KFD unit in Shimoga also functions as a diagnostic centre, conducting virus isolation studies and serology test.

The Task Force is of the opinion that the KFD unit in Shimoga deserves modernisation, especially for improving the technology for diagnosis of human KFD.

Japanese Encephalitis

While the major plank of JE control is vector control, JE vaccine also has a role to contribute. Currently JE vaccine is manufactured at the Central Research Institute, Kasauli, Himachal Pradesh. When the control of JE is brought under the integrated vector borne diseases, a holistic approach of the careful assessment of the need and the potential of using the JE vaccine may also be considered.

Cold chain for vaccines and other biologicals

Fortunately, cold chain equipment has been provided to all relevant institutions, for holding their vaccine stock under refrigeration.

- Use same for rabies vaccine
- Use same for anti snake venom sera

Recommendations

- Review periodically the Immunisation Policies and Practices with the help of experts.
- Establish Disease Surveillance System to measure the outcome of the Universal Immunisation Programme. Any occurrence of vaccine-preventable disease, especially in a cluster of two or more cases, must immediately attract public health attention, and improve vaccination coverage locally
- Include Hepatitis B vaccine under Universal Immunisation Programme for the immunisation of children.
- Production of vaccine in the State to be modernized using the latest technology, under guidance of a Technical Steering Committee for a) Kyasanur Forest Disease b) Cell Culture Anti Rabies vaccine and vaccines against typhoid, Japanese Encephalitis and other vaccine preventable diseases in collaboration with the Department of Animal Husbandary .
- Maintenance of cold chain and utilizing it for all drugs and vaccines that require cold chain.

5.4.4 FOOD AND WATER-BORNE DISEASES

Introduction

Food, water and substances of human sustenance, are also potential vehicles for the transmission of pathogenic microbes. Human progress has resulted in organised production, collection, processing, and distribution of various ingredients of food as well as of drinking water. By and large, such organisation has improved the quality and safety of food and water, contributing to human health, and prevention of food / water-borne infectious diseases. At the same time, if pathogens find entry into such a volume distribution system for public consumption, then large numbers of consumers are put at risk at once. There have been many instances of such food and water-borne outbreaks of diseases in many countries in the world. Such experiences of detecting and controlling diseases have helped in the growth and development of public health expertise and practice the world over.

In the context of Karnataka, water continues to be a common channel of infection, especially in urban communities. Processed and ready-to-consume food is beginning to become commercially available. Eating out of home, in hotels, restaurants, dhabas and roadside eateries etc., is already widely practiced. It is important to ensure the safety of water and food for human consumption in all communities. Not that these issues have been ignored in the past: checks and measures have been made to ensure such safety. Rules and procedures do exist. However, their implementation leads much to be desired.

Food and water provide a mechanism for direct person to person transfer of chemicals, toxins and organisms causing infections and diseases, such as food poisoning (salmonella, staphylococci, clostridia), typhoid fever, dysentery (shigella / amoebiasis), cholera, giardiasis, other diarrhoeal diseases, Hepatitis E and Hepatitis A, tapeworms, nematodes and various flukes. The microbial pathogens are exclusively human infectious agents and therefore all of them are amplified in human gastro-intestinal tracts. Human faecal contamination of water or food is the critical step that sets off the ensuing events to leading to outbreaks of food/water-borne infectious diseases.

Situation analysis

In the absence of a functional disease surveillance system, no statistics on diseases is complete or reliable. The available information is the cumulation of reports from the various levels of primary and secondary health care

system in the government sector. Therefore the data should be accepted as indicative of the magnitude of the disease burden rather than representative of the magnitude.

Table 5.11 : Reported numbers of cases and deaths in 1995 and 1996

Year	Disease	Number of case	No. of deaths
1995	Ac. diarrhoeal diseases including cholera	7,54,966	426
1996		7,12,179	348
1995	Enteric fever	34,801	19
1996		26,198	24
1995	Viral hepatitis	7,377	69
1996		7,377	49

The nature of the information available to the Health Department reveals several drawbacks. The issue of incompleteness and lack of data from the private sector health care providers has already been alluded to. Another glaring drawback is the fact that diseases are classified syndromically, without data on aetiology, which is essential both for appropriate treatment and for taking appropriate public health interventions.

There is very little information on the overall contribution of water and food in spreading infectious agents. Every time there is a fairly large outbreak of diarrhoeal disease / cholera, especially one which gets reported in the media, then the water supply comes under scrutiny. All too often, the results of microbiological testing of drinking water show contamination with human faecal microbes (coliforms or actually *E.coli*). It is then surmised that the pathogen causing the outbreak, whatever it was, was also present in the drinking water. Indeed, many anecdotes of outbreaks of hepatitis are heard of but investigations for the delineation of the exact aetiology or its transmission pathways are not undertaken.

Cities and towns do have rules and regulations dealing with hygiene and standards in food-serving centres such as hotels / restaurants. However, this system of Inspection was established during British rule and not improved upon in recent times. In many developing countries stringent screening of food handlers, food components and food is implemented, by which food safety is ensured.

The needed improvements and interventions:

In 1854 there was an outbreak of cholera in one part of London. The local administration was able to supply to Dr. John Snow, a detailed map of the water distribution lines of two companies that provided water to that area. John Snow saw the association of one of these two water supplies with cholera cases and concluded that it was responsible for the outbreak. The hand pump of that water supply point was removed and the outbreak was controlled.

In our country, urban development has gone on without the service components keeping pace. While it is easy to say that clean and safe drinking water supply alone will result in the prevention of a large proportion of gastrointestinal diseases and consequent deaths, it is not easy to set things right without huge inputs of money

and material. We cannot wait, to improve the situation, for the engineering sector to modernise the water supply system. We must find ways of preventing outbreaks of water-borne infectious diseases, accepting the present system of water supply.

What is the role of the Health System in prevention and control of food / water – borne infectious diseases?

The Health System must know about every outbreak of food / water – borne infectious disease, for which purpose it must establish a systematic method to learn about its occurrence and its exact etiology, and its exact mode of transmission. For this purpose, the Health System must have a functional epidemiological disease surveillance system spanning across public and private sector health care providers. In addition, the Health System must also have skills, personnel and wherewithal to investigate outbreaks both epidemiologically and microbiologically.

The Health System must assume **responsibility** for regular periodic monitoring of the microbiological safety of water, and food served in public places. While the standards of safety of water are well established, namely the total absence of coliform bacteria, the standards of food safety have not been adequately defined. Over the past several decades, our understanding of the aetiological agents of food-borne infectious diseases has improved very much, but these have not made an impact on our ability to monitor and prevent food-borne infectious diseases.

Recommendations

- *The Health System must establish a functional disease surveillance system and develop epidemiological, microbiological and chemical analysis and expertise and facilities for early outbreak control.*
- *The health system must establish routine periodic monitoring of water for coliforms and chlorine content. Each local area health authority must develop its own plan of action to monitor water quality. At any point when coliform is found in supplied water, that information must be immediately made available to the local government, the water supply agency and also to the public (consumers). Health System will also provide technical advice for correcting the deficiencies and to monitor progress.*
- *The Health Department must review and revise the regulations and legislative measures governing food safety. Regulations must include all food serving facilities including street vending. They must check and prevent adulteration and contamination of foods at various stages of production, processing, storage, transport and distribution..*
- *The Health Department should develop guidelines for the health check-up and immunization of food handlers against typhoid fever and hepatitis A.*
- *Control measures recommended include, training and certification of food handlers in restaurants, hostels, hotels etc.*
- *Personal hygiene, adequate cooking of food – this needs to be part of the health promotion package for children, women and the public in general.*

5.4.5 HIV/AIDS, REPRODUCTIVE TRACT INFECTIONS (RTIs), AND SEXUALLY TRANSMITTED DISEASES (STDs)

"And that was the day that we knew, oh ! In the world there is a new disease called AIDS. I thought surely this will be the greatest war we have ever fought. Surely many will die. And surely we will be frustrated, unable to help. But I also thought the Americans will find a treatment soon. This will not be forever."

- Dr. Jayo Kidenya, Bukoba, Tanzania, 1985

Sexually Transmitted Diseases (STDs) and Reproductive Tract Infections (RTIs)

STDs are a group of communicable diseases, transmitted predominantly by sexual contact. From the earlier five venereal diseases (syphilis, gonorrhoea, chancroid, lymphogranuloma venereum and donovanosis) they now comprise a group of diseases resulting from 20 causative organisms that include bacterial, viral, protozoal, fungal agents and ectoparasites. Recent studies show that prevalence rates of RTIs in women are fairly high, as are STDs in the general population. Routine statistics greatly underestimate the problem. For reasons of privacy people prefer over the counter medications or go to quacks and private practitioners. These never get reported and the appropriateness and rationality of treatment are questionable from untrained health care providers. Women suffer particularly because of feelings of shame and shyness to share about symptoms and lack of access to health care services that are technically sound, humane and sensitive. However, this particular problem of public health importance is another among those that have received inadequate attention in provision of service and in public education in Karnataka, as in the country. This is despite adequate funding in the RCH programme and the HIV/AIDS programme.

Three types of RTI's need to be addressed appropriately:

- Sexually transmitted diseases, e.g., Gonorrhea, Syphilis, Trichomonas, Chlamydia, HIV/AIDS.
- Endogenous due to overgrowth of existing bacteria, e.g., Candidiasis during pregnancy.
- Infections caused by instrumentation, e.g., following a pelvic examination, septic abortion, etc.

STDs can be broadly classified as genital ulcerative (e.g. Syphilis) and genital discharge (e.g. Gonorrhea)

Co-relation between STDs & HIV infection:

- Presence of a genital ulcerative STD increases the chance of acquiring HIV infection by 10 times. Presence of an STD causing genital discharge increases the chance of acquiring HIV infection by 4 times. Therefore prevention, early diagnosis and effective treatment of STDs is an important targeted intervention for prevention and control of HIV/AIDS.
- An underlying HIV infection makes STDs more severe and more difficult to treat.

Morbidity

RTI's can cause pain, ulcers, discharge and infertility in males and females. They can lead to prostatitis & epididymo-orchitis in males and dysmenorrhoea, or ectopic pregnancy following pelvic inflammatory diseases, etc. in females. A large percentage of women are asymptomatic and therefore are unaware of the presence of any infection.

Women are biologically more prone to infections than men because of a larger mucosal surface available for entry of infecting organisms. Young girls are more vulnerable to RTI's specially STD, as are older menopausal women.

RTIs/STIs are supposedly dealt with through the RCH program. But the ineffective implementation of this component, biological vulnerability to these diseases, the lack of power to negotiate responsible behavior from their sexual partners and the non-availability of lady medical officers in adequate numbers, all contribute to increasing incidence of these eminently preventable diseases amongst women.

HIV/AIDS

Incidence and Prevalence

India has the largest number of people living with HIV/AIDS in the world. Latest reports from NACO estimate the prevalence of HIV/AIDS in India at anywhere between 3.5 to 4 million cases. The numbers *per se* may not be seen as large compared to other health-related problems. What is alarming is the steady rise in incidence, with estimates that the numbers are doubling every three years.

From the first HIV sero positive individual detected in 1988 in Karnataka the numbers have risen dramatically and is estimated to be upwards of 0.15 million. Karnataka is now third among the states with the highest prevalence, Maharashtra, first and Andhra Pradesh, second. Tamil Nadu which was second on the list a few years ago has managed, with a concerted effort by TNSAPS and NGO partners, climb down to the fourth position.

Six districts viz., Bangalore Urban, Mangalore, Udipi, Dharwad, Bellary and Mandya contribute to 73.3% of HIV positive cases in this State.

It is also no longer confined to the so-called "high risk behavior" groups. The infection is spreading rapidly to the general population or the so-called "low risk" population of women and youth. The National AIDS Control Organization's (NACO) epidemiological data (1997-98) revealed that one in every four cases reported is a woman with heterosexual transmission being the single largest mode of transmission. Women are also getting infected at an earlier age. Karnataka sentinel surveillance figures show an HIV infection levels of more than 1% among antenatal women.

HIV/AIDS and development

Because it predominantly affects the most economically productive age group of 25-40 years, HIV/AIDS impacts adversely the economy of the country; and at the individual level leads to increased poverty in the already poor sections of the community. Its association with risky sexual behaviour had led to stigmatization and consequent negative social impact.

This socio-economic dimension to HIV/AIDS makes it a developmental issue. The devastating effect of HIV/AIDS on Sub-Saharan Africa should be a lesson to us. And, unless effective control measures are taken at the earliest, the recent gains made in our country and in particular, Karnataka in terms of Human Development will be negated and we will be set back by several years.

The association of two important diseases with HIV infection is known

There is a considerable increase in the incidence of TB which is the commonest opportunistic infection found among HIV patients in India. There are additional problems of drug reactions and drug resistance in HIV patients.

STD - not only indicates risk behavior, but an underlying STD also increases the chances of HIV infections by 15 to 50%.

Vulnerable populations:

The marginalised sections of our society are most vulnerable to HIV/AIDS and its consequences. Though poverty is a factor, very often risk behaviour is related to other factors. Often the criminal laws and the law enforcement agencies themselves lead to increased marginalisation and exploitation of already marginalized groups.

Women: Biological (physiological), social, cultural, economic factors and gender inequalities make women more vulnerable to STDs & HIV/AIDS.

Children : In the coming years, as HIV infections increase, large percentages of children will be orphaned, or affected by HIV themselves. Opportunistic infections in children with HIV occur more often and are likely to be more severe or difficult to treat.

Street children in particular are vulnerable. Sexual relations start at a very early age (10 years or even earlier) and are a part of the reality of street life- power struggles; as a payment for favours and protection of older "God-Fathers". This coupled with a certain fatalistic attitude to life, lead to low impact, if any, of awareness and preventive intervention programmes.

Adolescents : Despite quite a high degree of awareness about HIV/AIDS, the knowledge is not translated into responsible (sexual) behaviour because of misinformation and myths; and a feeling - "This will not happen to me!"

Migrant workers and others who stay away from their homes and family for long periods of time are vulnerable because of the high incidence of promiscuous and unsafe sex.

Others who are vulnerable for the same reasons are **inmates of jails, boys' hostels** etc, especially because of a high incidence of homosexual activity. Preventive interventions like distribution of condoms amongst them is not possible as these are construed as "aiding and abetting" a criminal / illegal act, under Section 377 of IPC, 1860, which criminalises "sexual intercourse against the order of nature".

STD infected have an increased risk for HIV infection. Addressing AIDS will be far more difficult in a country like India, where leucorrhea and gonorrhea, which can be prevented and treated, have not yet been successfully addressed.

Commercial Sex workers for obvious reasons are the most vulnerable. In Karnataka there is no designated "Red Light district" for sex work like in some other cities. This and exploitation by the police make it even more difficult to reach preventive interventions to them.

Alcohol abusers: Several studies in Karnataka and elsewhere have found a significant link between alcohol use and abuse and sexual risk behaviour. Karnataka does not have a significant injecting drug abuse problem; alcohol use and abuse though are quite high.

An evolving response to the HIV-AIDS epidemic in Karnataka

The first AIDS surveillance centre was set up in Bangalore Medical College in 1987 with technical guidance from the Indian Council of Medical Research. During 1989-94 the Blood Safety Programme, assisted by Government of India, initiated the modernisation of the blood banking system in Karnataka. The State AIDS Cell was established in 1992.

From 1992-1998, Phase I of the National AIDS Control Programme was implemented with World Bank assistance. Under this program 10 zonal blood testing centres were established and 52 blood banks (37

government, 15 private) were modernized. Sectoral surveillance was carried out through 7 STD clinics and one antenatal clinic. Three Voluntary Blood Testing Centres were set up. Training of doctors and paramedical workers was conducted. Health education and IEC programs reached out to communities using a variety of media. STD clinics have been strengthened. The Karnataka State AIDS Prevention Society (KSAPS) was registered.

Phase II of the AIDS Control Project was launched in December 1999 for a 5 year period till 2004, with World Bank assistance and the overall objectives of keeping HIV prevalence rate below 3%; awareness level of not less than 90% among the youth and those in the reproductive age group; and achieving condom use of not less than 90% among the high-risk behaviour groups. It aims to reduce the spread or transmission of HIV infection in the state and to strengthen capacity to respond to HIV/AIDS on a long-term basis.

NGOs have been active, particularly in Bangalore. Three NGOs provide care and support to people living with AIDS (PLWA's) in Bangalore (one also has home based care program), one for women in Chickmagalur while another is being established in Mangalore (February 2001). A well women clinic is run by an NGO in Bangalore; two other NGOs work with CSWs in Bangalore and Belgaum. Other NGOs work with preventive education in schools and industries in and around Bangalore; and with truckers in Raichur, Bangalore and Mangalore. Two networks namely the AIDS Forum Karnataka (AFK) and the Karnataka Network for People Living with HIV/AIDS (KNP+) have been formed. Another NGO network, CHAIKA has undertaken sensitization and training programs for its member institutions (over 300) working in different districts. A few mission and private hospitals provide testing and inpatient facilities for HIV positive patients who need medical care. Training of Counsellors for HIV/AIDS is also carried out. Other NGO's include HIV/AIDS work as part of their overall health work. For instance HIV/AIDS awareness is part of women's health empowerment training program. The National Law School University of India takes an active part in legal and ethical aspects of HIV/AIDS

Thus over the years a slow but sure response to the HIV epidemic has evolved in Karnataka. Efforts are however inadequate and slow in respect of the rapidly increasing trends in infection rates, the spread of the infection into the general community and evidence regarding growing vertical mother to child transmission.

Several factors are responsible for this:

- People, especially people at the helm of affairs, are not accepting the reality of AIDS- not accepting the estimates; not accepting that promiscuity is wide-spread; not accepting that preventive interventions should include discussions with adolescents on issues related to sex; and so on.
- The silence that surrounds the AIDS victim due to the associated stigmatisation and shame make it that much more difficult for interventions to prevent further spread to reach them.
- The HIV/AIDS prevention and control programmes have remained in a vertical mode, largely independent of the Department of Health & Family Welfare activities. The department therefore has not responded responsibly to this problem.
- A majority of the interventions are Bangalore-based. This inequality needs to be addressed especially in the high prevalence area.
- Many issues related to acquisition and spread of HIV/AIDS is rooted in underdevelopment, as also, the negative consequence of HIV/AIDS on development. Thus, HIV/AIDS policy and interventions need to be integrated into general developmental policies that deal with raising socio-economic and health status.

The action points should therefore cover the following

- A “mapping” of prevalence of STDs and HIV with related socio-cultural and risk factors, to enable specific needs based and local level interventions. Needless to say, this has to be done in a sensitive manner, keeping in mind the stigma, confidentiality etc.
- A comprehensive media campaign for awareness utilizing professional agencies, which will focus on prevention as well as strategies to reduce stigmatization
- An equal emphasis on awareness among larger vulnerable populations in addition to targeted interventions among “High risk groups”.
- Involvement of PLWAs in the management of HIV/AIDS - design, implementation and evaluation of KSAPS programs
- A special cell to look at legal & ethical issues related to HIV/AIDS

Recommendations

I. For STDs/ RTIs in general

- *Facilities for simple diagnosis and treatment of STDs/ RTIs in all PHCs and CHCs. Necessary drugs to be listed in the essential drugs list and uninterrupted supplies to be ensured. Treatment of partners or contact treatment is critical for control.*
- *PHC and CHC medical officers to be re-trained through CMEs regarding management of STDs/ RTIs and HIV/AIDS. Patient feedback to be actively sought regarding quality of care. Feedback should modify the functioning of the programme.*
- *Educational and health promotional programmes for different groups in the community to be sensitively developed in collaboration with NGOs, teachers, communication and health promotion experts. Films, TV, theatre, street plays and folk media to be used. Prominent sports and entertainment personalities to be brought into the campaign. Creation of peer group programmes and sathis for adolescents.*
- *STDs/ RTIs/ HIV to be part of the epidemiological diseases surveillance system.*

II. More specific to HIV/AIDS

- *Integration of HIV/AIDS programme with primary health care and all levels of services. Special linkages with programmes for STDs/RTIs and tuberculosis.*
- *Capacity building through training at various levels for PHC medical officers/ all allied health workers, general practitioners and NGOs.*
- *Developing Voluntary Counseling and Testing Centres (VCTs) in all districts. This will entail making available diagnostic facilities in all district hospitals and subsequently taluk hospitals. Training for maintaining of confidentiality will need to be undertaken. Caution to be taken so that counselling does not become routine pre and post test rituals to meet obligatory requirements.*
- *Interventions to be undertaken to initiate and maintain behaviour change that decreases the chance of HIV transmission. This would include messages regarding risk reduction behaviour, safe*

behaviour, no anonymous or casual sex and faithfulness to one partner. Work particularly with adolescents and youth. Strategies to relate to individual's behaviour, educational levels, culture beliefs, ethnicity, gender, knowledge. Awareness and preventive education among children, adolescents, women's groups etc. The "men make a difference" campaign attempting to make men more responsible in the control of the epidemic to be supported.

- *Condom promotion within the state through a multisectoral collaboration involving KSAPS, NGOs, condom manufacturers, market research agencies. Education on the correct use of condoms.*
- *Shift emphasis of targeted interventions from "high risk groups" only to a larger vulnerable population.*
- *Home care counselling and support programmes to be encouraged with facilities for treatment of opportunistic infections*
- *Access to antiretroviral therapy is an issue that needs to be negotiated with the Government of India, pharmaceuticals and international bodies. Provisions under WTO to be used for indigenous production, which would lower costs. Care to be exercised in the rational use of these drugs so that resistance does not develop. Drug therapy to be introduced only where necessary investigations are possible.*
- *Involvement of people living with AIDS (PLWAs) in the management of HIV/AIDS – design, implementation and evaluation of KSAPS programmes.*
- *Strengthen and establish state private sector collaboration with NGOs, private medical institutions and professional bodies such as IMA, FOGSI etc and intersectoral coordination within government departments and agencies.*
- *KSAPS to play a nodal role, including advocacy with political leaders; resource generating management; to promote district level action and to function with accountability. Create a specialized cell to address legal and ethical issues.*
- *Measures to prevent mother to child transmission - antiretroviral therapy, alternatives to breast milk and support.*
- *Blood safety to be strengthened.*
- *Treatment and admission policy in all hospitals, not just one or two centres, including routine treatment as well as treatment of opportunistic infections, particularly TB, ethical and effective antiretroviral therapies.*
- *Training and networking for home based care, including use of herbal medicine and other systems of healing with backup support for referral hospitals.*
- *Universal precautions and disposal of bio-hazard wastes in health care institutions.*

5.4.6 LEPROSY

National Leprosy Control

Leprosy Elimination - Declining prevalence but persisting incidence.

The detection and control of leprosy as a national programme is in a process of evolution. The National Leprosy Control Programme has been renamed the National Leprosy Elimination Programme with the goal of achieving the incidence of new leprosy, of less than 1 per 100,000 population. The target year for achieving elimination status was the year 2000. The method is multi-drug therapy, especially of multi-bacillary cases, for a period of only one year, by which time a total microbiological cure can be achieved. Consequent to this hope, currently the "vertical" leprosy program is being integrated with primary health care. The disease burden of leprosy, as detected by the leprosy Programme is given Table 5.12.

Table 5.12 : The situation under the Leprosy Elimination Program, Karnataka.

Year	Target for detection	Achievement	% Achievement	Target for completion of treatment	Achievement	% Achievement
1994	20,000	26,465	132	40,000	30,462	76
1995	18,000	24,019	133	30,000	26,221	87
1996	9,000	21,978	244	26,000	23,076	89
1997	8,000	19,589	245	23,000	20,883	91
1998	6,000	17,761	296	19,320	21,202	110

It is quite obvious from the above table that the target set for detection of new cases for each year was unacceptably low, in comparison with the experience of the immediate past year. This resulted in achievements of 200-300% of the target. On the other hand, the target set for completion of treatment (one year for multibacillary and 6 months for paucibacillary) appears to be better guided by year-to-year experience.

The table shows that from 1994 – 98, 21,000 to 30,000 patients had completed treatment annually and were presumably microbiologically cured. However the incidence of newly detected cases continued to be high. Accepting the yearly numbers to be 17,000 to 18,000 new leprosy cases detected, the annual incidence (calculated on the denominator of 60 million in Karnataka) is in the range of 28-30 / 100,000 population. The target for Leprosy elimination by the year 2000 was less than 1/100,000 population. The Multi Bacillary cases cured / disease arrested during the 5 years (1994-1998) were, 6348; 4517; 4355; 3829; and 13,763; respectively. These numbers do not show a downward trend. The annual incidence of detected MB cases was about 7/100,000 during 1995 – 97 and 20/100,000 in 1998. Leprosy Elimination is thus not within grasp as yet in Karnataka. The continuing high annual incidence rates of leprosy must be viewed with concern.

Integration of Leprosy programme with Primary Health Care

The Leprosy programme is in the process of integration with the primary health care system at all levels. All PHC doctors and health workers are being trained in the diagnosis and treatment of leprosy. The laboratory technicians are being retrained for skin snip smear examination for detection of *Mycobacterium leprae*. This phase of integration will have to be managed very carefully. It is proposed that the Taluka Health Officer will be given the Supervisory role for Leprosy detection, treatment, follow up and documentation. The Taluka Health Officers will be guided, and supervised, for the leprosy work, by the District Leprosy Officer.

The early signs of Leprosy are often without symptoms of discomfort and disfigurement. Therefore there is a tendency for persons with early leprosy (skin patch, nerve thickening) not to seek health care. Moreover since the primary health care system is heavily involved in the diagnosis and treatment of serious or life threatening diseases, often accompanied with symptoms which force people to seek health care, there is the probability that health care workers may not pay due attention to the diagnosis of early leprosy. Under the Leprosy programme dedicated leprosy workers actively searched out for early leprosy cases and brought them under treatment, continued their follow up and documented data diligently. The importance given to Leprosy detection and management should be continued without letup even when the programme is integrated with primary health care.

The uneven distribution of Leprosy in Karnataka

Over the last several years the following districts have reported more than 2000 cases of Leprosy each year: Bijapur, Bellary, Gulbarga, Raichur.

The following districts have been consistently reporting between 1000 – 2000 cases annually: Kolar, Belgaum, Dharwad, Bidar, Mysore

The following districts have reported 500 – 1000 cases annually: Bangalore, Bangalore Rural, Shimoga, Tumkur, U. Kannada, D. Kannada, Mandya.

Three districts Chikamagalur, Hassan and Kodagu have been reporting less than 100 cases annually.

Keeping this geographic pattern in mind it will be very important for the state health leadership on the annual number of cases reported from the time of integration with primary health care. If any district shows a fall in numbers since integration with primary health care, those districts must be specially targeted for intensive studies to check if there has been any deficiencies in case detection methodology.

Maintaining the state expertise in Leprosy

There are district leprosy offices in nearly all districts. The high prevalence districts have 2-4 Leprosy Control Centres while most others have one LCC each. The State has 677 Leprosy Sample Survey-cum-Assessment Units, 6 reconstructive surgery units, 2 Leprosy training units, 3 Rehabilitation Centres and 14 Modified Leprosy Control Units. It is very important that these units, centres and their staff are sustained for their expertise and interventions even after integrating leprosy programme with primary health care.

Leprosy continues to be an important health problem in the State. It is not contagious, and its exact mode of transmission remains unidentified. However, it is eminently treatable, especially when detected early, particularly before any deformity has developed. Although the antimicrobial treatment is well standardised, the diagnosis and management of neuritis, nerve damage, deformity, ulcer formation, “reaction” states, etc. do require special skills and expertise, which is currently available with the appropriate leprosy staff. Even though a person may be declared microbiologically cured, he/she requires long follow up to detect and remedy any of the above

complications, which may appear any time during the months to a few years after completing specific treatment (of 6 months for PB and one year for MB cases). This "care after cure" is very important in preventing the disfigurement so often associated with leprosy and which often leads to social discrimination of persons affected with leprosy. For these reasons it is very important for the health care system to continue to focus attention on early detection, treatment and follow-up of persons with leprosy.

Recommendations

- *The Department of Health should maintain the expertise and skills developed and sustained over the years in the detection and management of leprosy even after integration of leprosy into primary health care.*
- *The Leprosy incidence must be closely monitored so that under-diagnosis, if any, due to the integration with the primary health care system, may be identified and rectified without losing ground.*
- *Rehabilitation of leprosy cured persons with disability to be taken up seriously.*

5.4.7 RABIES

The situation

Statistics on rabies are unreliable. Official reports indicate annual numbers to be 1345 in 1990 and 1424 in 1993. However the reported numbers of death due to rabies in these years were only 40 and 34, respectively. Everyone knows that case fatality of rabies is 100%. On the other hand, in 1990, the number of rabies patients admitted in Bangalore Epidemic Diseases Hospital alone was 65. Post-exposure rabies immunisation after animal bites is given in at least 4 major Government hospitals in Bangalore, and in one of them (Jayanagar General Hospital) the number of persons so treated is about 3000 per year. Animal bites and rabies deaths are a serious, but preventable health problem. The economic loss due to this problem has not been calculated. The major responsibility of the Vaccine Institute, Belgaum, is to produce sheep brain (Semple) rabies vaccine (ARV). In 1998 (April – December), 1617 litres of ARV was produced; the expenditure of the Institute was Rs. 62 lakhs. To this we may add transportation, storage, physician-time, injection equipment, work time lost, human suffering and the loss of life.

Problems:

- Lack of an integrated approach to prevention of animal and human rabies.
- Several agencies involved, but not coordinated.
- Interference from animal rights people who put obstacles to dog control, but ignore the thousands of sheep being slaughtered for preparing ARV.
- ARV is not safe for human use, although highly antigenic (effective). One person per 3000 – 7000 vaccinees get severe paralysis (allergic encephalomyelitis) due to the myelin in the vaccine. About 10% of them die as a result. The rest of the world has given up its use and replaced with either newborn mouse brain (no myelin) rabies vaccine (in very poor countries) or one or another cell culture rabies vaccines or purified duck embryo rabies vaccine. In India, one manufacturer makes chick embryo fibroblast cell culture vaccine and another is apparently ready with a Vero cell culture vaccine. Imported Vero cell vaccine and human diploid cell culture are also available. In the private market, cell culture rabies vaccine costs over

100 rupees per dose, and 5 doses are needed per person bitten by an animal suspected to have rabies.

- Strict quality assurance is lacking in management of animal bites. Anecdotally it is reported that a large proportion of subjects are vaccinated without proper indication.
- Rabies immune globulin is not readily available. It is necessary for post exposure treatment of persons bitten by rabid animals or those bitten on face, head, neck, hand or genital area, by an animal suspected of rabies.

Recommendations

- *The responsibility of dogs on the streets belongs on the legally correct agency. The health authority should immediately call a meeting of the relevant agencies: those who manage roads, veterinarians, health personnel, local administration, Vaccine Institute, SPCA, animal activist lobbies, ministry of environment etc. and prepare a comprehensive action plan, within 6 months, defining responsibilities. The plan of action must be put to action.*
- *Immediate action to train relevant personnel on rational use of ARV.*
- *Decision to discontinue the use of animal brain rabies vaccine, and to replace with a cell culture vaccine. Design the transition from animal brain ARV to cell culture ARV. Evolve a method to give cell culture vaccine at no payment to poor people but leave the private sector patients to purchase it. The price of cell culture vaccine may come down drastically, if bulk orders are placed.*
- *Explore manufacturing of cell culture vaccine in Belgaum Institute.*
- *Ensure strict licensing and immunising of pet animals in every town and city. In rural areas this may not be possible.*
- *Educate the public on rabies.*
- *Revise Public Health Act on rabies patient's management in Hospitals. Shutting up in cells is a gross violation of human rights and ethics.*
- *Ensure that the responsibilities have been clearly defined and the respective agencies have begun action (Corporation, highways, SPCA, Environment etc). If dogs cannot be killed, then sterilization and rabies immunisation must become the responsibility of a defined agency.*
- *Continuing Medical Education for correct management of animal bites to all registered practitioners / hospitals etc. State Institute of Health & FW to be in charge. Material to be professionally prepared.*
- *Rabies to be included in the disease surveillance list.*

5.4.8 OTHER INFECTIOUS DISEASES

Introduction

There are a number of infectious diseases, other than those discussed above, that deserve our attention as well as plans for intervention. Infection by a pathogen is the result of the following two phenomena. One is the amplification of the pathogen and the second, the transmission of the pathogen to the human hosts.

Amplification of the pathogen may occur in humans themselves, and transmission may occur directly (person-to-person) or indirectly via biological vectors, via environmental vehicles such as food / water. Some pathogens are amplified in vertebrates and humans get infected either by direct contact (such as bite, for rabies, via milk for brucellosis) or indirectly (through mosquitoes as in Japanese Encephalitis, via soil as in leptospirosis). Such diseases are called Zoonoses. There are pathogens amplified in the environment (other than vertebrates or biological vectors), such as soil saprophytes causing human disease include melioidosis and mycotic diseases. Guinea worm (*Dracunculus medinensis*) is a nematode, with life cycle shared between fresh water crustaceans and humans. The lesson to be learned here, is that a holistic understanding of the ecology of a region, including the cataloguing of all potential human infectious agents, is essential for taking control over human infectious diseases.

Recent decades have witnessed the appearance of new diseases in different regions (HIV /AIDS, Ebola disease). Consequently the concept of "Emerging and Re-emerging infectious diseases" has been formulated. They include:

- Previously unknown infectious diseases being recognized anew
- Recent trans-species transmission of pathogens
- Previously known agents now appearing in new geographical territories
- Re-appearance of diseases once under control
- Infectious diseases out of control (increasing incidence / prevalence)
- Increasing anti-microbial resistance of specific pathogens

Against the above broad-brushed backdrop, selected infectious agents and diseases will be presented below in order to focus attention on them. However, the important lesson is that infectious diseases are a reflection of the environmental factors – including degradation and human invasion into the ecological balance of Nature. To illustrate this further, it may be pointed out that there is no Department of Public Health in Singapore. All diseases are reported (under disease surveillance) to the Department of Environment. Disease control measures are taken jointly by the Departments of Environment and Health.

Draunculiasis (Guinea worm disease)

India has been declared free of Guinea Worm Disease as of Feb 2000. The last case had been reported in 1996. During the past 5 years, Guinea worm disease was officially recognised only in the state of Rajasthan. On the other hand the Annual Reports of the Department of Health and Family Welfare, Karnataka continued to report "endemic status" of Guinea worm disease even in 1998-99 and 99-2000 in Raichur, Bijapur, Gulbarga and Bellary districts. Anecdotal information of the continued occurrence of Guinea worm disease in Bellary district has been presented to the Task Force.

The Task Force views this situation with concern and recommends that Guinea worm fact-finding mechanism be established and the situation clamped within the next 6 months. All the districts in which Guinea worm disease was known to occur in the late 1980's and early 1990's should come under scrutiny.

Leptospirosis

Human Leptospirosis is increasingly being recognised and reported in the medical press, in different parts of the State. Animal Leptospirosis has been widely recognised by the Department of Animal Husbandry and modern and competent laboratory expertise has already been established.

On the other hand, laboratory diagnostic facilities for human leptospirosis is grossly deficient in the health care system of the state. The Task Force desires that the Department of Health & Family Welfare and Department of Animal Husbandry develop a coordinated mechanism for the laboratory diagnosis, epidemiological investigations, health education and prevention and control of leptospirosis.

In the proposed expansion of the expertise of the State Level Apical Laboratory for Public Health, expertise for leptospirosis must be included. The State Laboratory will be responsible for the supply of the required reagents for the diagnosis of leptospirosis at the district and other relevant hospitals.

Leptospirosis will be included in the laboratory manuals at the State and District Levels.

Brucellosis

From the medical literature of the recent decades, it is widely recognised that human brucellosis occurs, not infrequently, in Karnataka. The infection is enzootic in animals (cattle and sheep/goats). Humans get infected through contact with animals and through consuming inadequately treated milk. The coordinated intervention of the Department of Animal Husbandry and the Department of Health & Family Welfare is essential both for epidemiological definition of the problem, measuring its magnitude and geographic distribution as well as for taking effective intervention for diagnosis, prevention and control.

Anthrax

Although it is well known that animal and human anthrax occurs in Karnataka, its magnitude and epidemiology remain unexplored. A coordinated approach, between the Departments of Animal Husbandry and Health & Family Welfare is necessary to define the problem and for interventions.

Intestinal helminthic and parasitic diseases

The common parasitic infections in Karnataka include hookworm, round worm, enterobiasis, trichuriasis, tapeworms, systemic cysticercosis, hydatidosis, amoebiasis and giardiasis. The prevalence of such parasitic infestations is inversely proportional to the level of the hygiene standards of the people, general sanitation of the environment, safe disposal of human excreta, and the safety of supplied water from faecal contamination. This has been discussed in the section on water and sanitation.

As the laboratory network at various levels is being strengthened, there should be a mechanism to collect and collate information generated in these laboratories. With such a mechanism in operation, we should be able to obtain a geographic mapping of the relative frequencies of these various parasitic infestations in humans.

Authenticated information must be translated into health education of the public – both for formal education (schools and colleges) and informal education (media).

For example, we are concerned about the prevalence of cerebral cysticercosis even in vegetarians. In this area also, coordination between Health Department and Animal Husbandry Department is essential.

Plague

Even though human plague has been eliminated several decades ago, it is most likely that the sylvatic foci of plague continue to exist in the forest areas of Karnataka. The Task Force recommends that laboratory skills must

be maintained in the state. Moreover, rodent surveillance, and the examination of rat fleas must be systematically maintained.

Common skin infections and infestations

Scabies, pediculosis or lice infestation, pyodermas or purulent skin infections, tinea or ringworm, superficial fungal infections of the skin, such as pityriasis, versicolor and candida, viral infections such as molluscum contagiosum and warts are all common skin infections, requiring treatment, which should be available in health centres as close to peoples homes as possible.

Otitis Media

Otitis media, both acute and chronic, is a common diseases of childhood. It is estimated that almost every third child in a rural population has a discharging ear. It is linked to poverty, overcrowding, poor sanitation and nutrition and inadequate medical care. Untreated it can lead to several serious complications and sequelae, including hearing loss, which then affects the development of the child. It is important to prevent the development of chronic suppurative otitis media and rupture of the tympanic membrane.

Recommendations

- *Active search to be conducted in the erstwhile endemic districts with Guinea worm disease, to ensure its complete elimination, and the result to be reported in the 2000-2001 Annual Report of the Department of Health and Family Welfare.*
- *The expanded laboratory in the Public Health System, at the State level, must develop expertise in the microbiology of the following diseases and develop training, reagents and standardisation of laboratory test for the District Laboratories; Leptospirosis, Brucellosis, Anthrax, Plague.*
- *After a disease surveillance system is established, a laboratory based information system must be developed in order to pool and collate laboratory generated information in infectious and parasite diseases. This will give the geographic prevalence of specific infectious diseases so that intervention can be designed and applied.*
- *A mechanism to coordinate public health activities between the Departments of Animal Husbandry and Health and Family Welfare must be created. Such a mechanism will help in epidemiological investigations, development of laboratory skills, vaccine manufacture and development, health education, and preventive intervention.*
- *All primary health centres and even sub-centres should be provided with simple drugs to treat skin infections.*
- *Provision of adequate quantities of water for washing and bathing, and health promotion regarding personal hygiene are important, particularly in the younger age groups, when personal habits are formed.*
- *Provision of antibiotics at PHCs and referral facilities for other interventions at taluk hospital level. Audiometry at least at district hospital level.*
- *Train the village level health worker to manage acute infections of the ear, preventing rupture of the tympanic membrane and the development of chronic suppurative otitis media.*

5.5 DISEASE SURVEILLANCE

The need for an epidemiological disease surveillance system

Public health cannot progress without surveillance systems. For example, the design, management, tactics and final documentation of the eradication of smallpox or Guinea worm could not have been achieved without high quality surveillance. Unfortunately, the surveillance established for smallpox and fever with rash was too narrow in its target diseases to be sustained after smallpox eradication. History is repeating with the efforts for the eradication of poliomyelitis, for which purpose, high quality surveillance for one disease has been established in all communities in the country. After the achievement and documentation of polio eradication, this surveillance will also decline. **Thus surveillance is an integral component of public health and disease control. It is not mere collection of information for statistics. On the other hand, it is information for epidemiological analysis and action.**

We have invested heavily in our universal immunization programme. Currently its success is evaluated by immunization coverage, which is an inputs-monitoring criterion and not an outcome measuring parameter. The outcome is the degree of disease reduction, which cannot be measured without measuring the frequency of the target diseases.

Outbreaks of water-borne or vector-borne infectious diseases (IDs) are not infrequent in Karnataka. Often such outbreaks come to the attention of the health system only after they have become large and even the news media have reported on them. The Health Department then gets blamed for the outbreaks, for no better reason than its ignorance of the outbreak in its early stage. Surveillance systems are essential for the early detection of outbreaks and epidemics, so that effective control measures can be applied in a timely fashion. Today it has also become obvious that surveillance is imperative for the detection and interception of emerging and re-emerging infectious diseases and also for understanding the pattern of risk factors and distribution of non-communicable diseases..

Situation analysis in Karnataka

Karnataka state does not have a working disease surveillance system. The existing rule for disease notification is neither widely known nor practiced, nor enforced. The State-wide network of primary health care centers are actually filing in monthly reports of communicable diseases, but these reports are used only for passing on to the next higher level of hierarchy, for adding to the statistics, without being made use of locally for any public health action. This information system has not served the needs for a disease surveillance system as described above. Another source of misunderstanding is that some consider the health management information system (HMIS) to be sufficient for the purposes for which surveillance is needed. Disease surveillance is neither for mere statistics, nor for management and administration, but for disease prevention and outbreak control. It is an integral tool of public health.

In public health we need the identification of pathogens and the delineation of their transmission pathways, in order to design and deploy preventive interventions. These modalities require the services of functioning microbiology laboratories, and also staff competent in epidemiology. For the identification of transmission pathways, the microbiology of food and water as well as the bionomics of vectors will have to be monitored. Although much expertise does exist in the State, in microbiology, epidemiology and medical entomology, these remain scattered and not integrated. The State Public Health Institute is the ideal repository of all these technical expertise, but the Institute is very inadequately equipped, funded and staffed.

The Karnataka Health Systems Development Project (KHSDP) has attempted to establish a disease surveillance system, which has not been implemented. Its design is relatively complex and not user-friendly, with several reporting formats. A committee has been formed to develop this further and a Memorandum of Understanding has been signed between the Directorate of Health and BPL Innovision for the necessary software development. The National Institute of Communicable Diseases has begun to encourage and fund a disease surveillance system in selected districts in India; its design is also inadequate. In the latter, there is no provision to include the private sector health care institutions in disease reporting. Thus, 60% or more diseases will be missed in this system. There is also no provision for the rapid transmission of information from the periphery to the central point. Both the Bajaj Committee report on Public Health (Planning Commission) and the Ramalingaswamy report on the plague outbreak in Surat and Beed, commend the North Arcot District Health Information (NATHI) model of disease reporting and surveillance as a potential national model. Both the concept of a district as the surveillance unit, and the postcard system linking private and Government sector health care institutions, which are the cardinal qualities of this system, have been described as appropriate for India. The NATHI model is currently being replicated in the neighboring State of Kerala.

Remedial measures

1. The mission

The ultimate purposes of disease surveillance are: 1) To prevent preventable diseases and to prove that diseases were actually prevented by intervention and 2) To recognise every outbreak at the earliest possible stage and to take effective measures to control its further spread and to prove that the intervention actually succeeded.

2. The Principles

Surveillance consists of three components, namely the recognition of the occurrence of diseases under surveillance; the reporting of such cases; and the response to the reports. The response includes epidemiological investigations, establishment of aetiology and transmission pathways, preventive and control interventions, evaluation and feedback.

3. The Starting Steps

Each District will function as the unit for disease surveillance. The District Health Officer shall prepare a complete list of all non-government health care institutions in the District. An institution with admission facilities (even with one bed) will be defined as a hospital. Other health care stations will be called clinics. The DHO shall send a first circular letter informing and inviting all hospitals to join the surveillance network. Hospital management will be requested to identify one liaison person and a back up person to work with the system. Training workshops should be designed and conducted in each town within the District, so that all personnel, governmental and non-governmental, become aware of and familiar with, the entire system. The liaison and back up persons from each hospital will be invited to the workshops. Thereafter the reporting forms will be distributed and a date set to start reporting.

4. Time Line

It is recommended that this system be established in two districts to begin with (starting by first quarter, 2001) and then expand to the remaining 25 Districts in a phased manner, to be fully operational in the State by the end of 2002. Chikamagalur and Dharwad Districts are recommended to commence the disease surveillance system. Preparations by DHO: Jan. 2001. Circular letters: February first week. Training workshops: February, March. Reporting starts: April 1, 2001. Computer training at District headquarters April. May 2001: Begin the process

in 5 selected Districts. By August 1, 2001, reporting should begin in them. Computer training, in September. September 2001: Begin the process in the remaining 20 Districts. By December 1, 2001, reporting starts in them. Computer training in November- December. The Bulletin starts in June or July, 2001, with the disease summaries of 2 Districts. In September or October, 2001 the Bulletin will contain disease summaries of 7 Districts. By January 2002, the Bulletin will cover statewide disease summaries.

5. Recognition of diseases

Sick people report to health care stations for help. They may be in the government sector or non-government sector. To begin with, we will concentrate on hospitals as diagnostic points for reporting. The health care worker, usually a physician, would make a working diagnosis and either seeks laboratory evidence, or, more commonly, begin treatment based on the presumed diagnosis. As the disease surveillance system is to be superimposed on the present condition of the health system, we have to accept the clinical diagnosis without laboratory confirmation, as a starting point of disease recognition. However, each disease must be reported the same day as presumptively diagnosed, as speed and sensitivity are more important than specificity in surveillance.

6. List of diseases for reporting.

All diseases cannot be and need not be under surveillance. Practicality demands the minimum number and public health requirement demands the maximum number. A balance must be struck, as shown below. The criteria for inclusion of a disease in the surveillance list are: those against which already preventive intervention is being applied; disease is outbreak-prone and outbreak control tools/measures are available. If specific intervention tools are not available for a given disease, then it is not desirable to include that disease in surveillance.

The suggested list of diseases for commencing disease surveillance include:

- | | |
|---|--|
| <ul style="list-style-type: none"> • Acute flaccid paralysis • Acute dysentery, Amoebic / Bacillary, • Cholera or cholera-like disease • Diphtheria • Encephalitis • Fever with bleeding tendency • Hepatitis, Acute viral | <ul style="list-style-type: none"> • Malaria, falciparum / vivax • Measles • Meningitis, Pyogenic / Aseptic • Rabies • Tetanus • Typhoid fever • Whooping cough • Any other, to be specified |
|---|--|

Reporting of diseases

All clinicians, in government and non-government sectors, must report these diseases as soon as they suspect them, to make the system meaningful. The health care workers must understand that their responsibility to the client is *diagnosis* and *treatment*, but their responsibility to the society includes the duty to *report* diseases of public health importance. The reporting form and method must be user-friendly and not cumbersome or time-consuming. Ideally disease reporting should be by telefax or internet. However, a simple, self-addressed, post-paid, card would suffice, or may be even better, since it is easily filled up in the examination room and mailed conveniently. It can and must be so formatted that the information can be directly fed into a computer. If the list of diseases is examined closely, it will be obvious that most, if not all, patients with any of them would attend a hospital or a clinic of modern medicine, government or non-government. Therefore, for practical purposes it would suffice if all hospitals and clinics of modern medicine reported cases of these diseases as and when they see them. To be meaningful, therefore, the disease reporting should be such that both government and private institutions must participate.

Response to reporting

The success of surveillance will depend entirely upon the response of the health system. In order to be practical, timely and efficient for mounting the necessary response, the surveillance system should be operative in a unit, which is sufficiently small but adequate. The District is the ideal unit for this purpose. The District Health Office is situated in a town with communication facilities. The reporting post card would reach the DHO's office within a day or two of posting. A computer can and must be installed at the DHO's office for entering the data of reports on a daily basis. The computerized data should be scanned on a daily basis to cull out duplicate reports and also to note any unusual clustering of cases in time or space. If any clustering is noted, then it is an early signal of an outbreak, now being picked up by the DHO's staff, much earlier than any one else, either in health profession or the media. Indeed, this capability will enable the DHO to initiate investigations, through the local health staff, very early in the course of the potential outbreak. In other words, the *first response* is to computerize, collate and interpret data. The *second response* is to investigate suspected outbreaks. The *third response* is to control the outbreak by appropriate interventions. The *modus operandi* of outbreak investigation and control interventions will be discussed later. The *fourth response* is to give a feedback to all reporting stations. The suggested method of feedback is through a monthly bulletin, published by the Health Department. One bulletin should suffice to cover all Districts of the State participating in the disease surveillance system. It should be the medium to give feedback, which should include the summary of reported diseases, the actions taken, the outbreaks investigated, the results and the interventions and their effects. The bulletin should also be able to provide any messages the Department wishes to address to all medical professionals in the Districts, clippings of current medical news of relevance, and at least one continuing medical education article per month.

- ***Motivation of reporting physicians.***

The interest of the reporting health care professionals can be stimulated and maintained by visibility of the four responses listed above. This will give the reporting clinicians the sense of satisfaction that their reports mean something to society, and not merely add to statistics that are not useful to society. This feeling alone will sustain the sense of ownership by the reporting institutions.

- ***Integration of different lines of data***

When surveillance data flow into the Health Officer's office, the information will be computerized. At the same time the DHO will be receiving, at different paces, information on communicable diseases from the PHC system. In addition, there will be data on TB, malaria, leprosy and some others too. The Health Department officials must grapple with the process of integrating all information for the purposes of 1. Outbreak recognition; 2. TB and other disease control; 3. Statistics.

- ***The staff, infrastructure and costs***

The reporting post cards must be printed separately for each district, in sufficient quantities, after obtaining the postal department clearance and the post paid system permit number. The District level disease surveillance system is designed to be implemented by the present staff contingent in the District, if necessary by redeploying them suitably, rather than by adding to them. One deputy DHO must be designated to be in charge, answerable to the DHO. There should be a computer and a person should receive and enter all cards on a daily basis and scan them as mentioned earlier. At least two persons should be trained to do this, so that work will continue even when one is on leave. And of course the supervisory staff and the Deputy DHOs and the DHO himself/herself should be well versed with the whole operation. The WHO EPIINFO software should be installed in the computer. The costs have to be worked out. In the original model in North Arcot District, the cost including

Bulletin was about Rs 100,000 per year. It would seem to be adequate even today in each District, if the Bulletin costs are borne centrally. The entire system should be supported, directed and supervised by a State level Officer (Jt Director) under Additional Director (Communicable Diseases). A network of laboratories must be available, with one central reference and special pathogens lab, a lab in each District (combining diagnostic and epidemiological service) and labs at Taluka and CHC levels, feeding information into the system. The State level expertise must also include competent epidemiological skills and tools. Repeated CME for the District leaderships must be organized at the State level. The Karnataka State monthly disease surveillance bulletin will be published by the JD, in collaboration with the State public health laboratory and the Public Health Institute.

Investigations following Reports

There are some basic principles to be understood about specific diseases. One case of polio is the outcome of some 200 children infected sub clinically with poliovirus; thus *one case is already an outbreak*. Similarly, one case of Japanese encephalitis represents about 500 sub clinically infected children and thus an outbreak. Since cholera is the result of consuming a large amount of cholera vibrios, it is an indication of the presence of the pathogen in a territory at a particular time. Thus, the first case of these illnesses should elicit the response of immediate investigations. Haemorrhagic fever may be caused by variety of pathogens and every case needs an etiological diagnosis, hence investigation. In the case of vaccine preventable disease, herd effect is operative and even a single case might be the *indicator of insufficient immunisation coverage*. If the child had not been vaccinated against that disease, the point is proven. On the other hand, a case may be due to *vaccine failure*, as shown by a fully vaccinated child developing the disease. This is reason for immediately searching for other similar cases, and if found, may be an indicator of *inadequate vaccine potency*. Here the vaccine lot has to be investigated. In the case of locally endemic diseases (dysentery, viral hepatitis, malaria, meningitis, typhoid fever) one case does not mean anything special. But, if a second case occurs within the incubation period of the disease, within the same locality, then it is an *indicator of an outbreak* already in the initial phase. Thus, *clustering of two or more cases* must elicit the response of investigation. Sometimes, the outbreak may break out so rapidly that a fairly large cluster of cases might be reported more or less simultaneously. Immediate investigations are called for. *The purpose of investigation is to understand the exact mode of transmission, so that it can be cut immediately*. It is not enough to say water-borne, vector-borne, food-borne etc., but, "Which source or supply of water? Which species of vector? Which food, from where?" These specificities must be identified before intervention can be applied. It may be that a particular ice cream or the ice used for frozen fish, or a part of piped water supply, or a well near a sewage pipe, or eggs from a poultry farm, or an unusual mosquito species, or an insecticide resistant vector, or water from a surface pond or whatever else, could act as the transmission pathway. Unless it is specified and cut, the intervention may not change the course of the outbreak.

The health system also has to prove that the epidemic curve deviated downward from the normal curve, coinciding with the intervention. Therefore, *qualitative and quantitative information* must be gathered by investigation. Standard methods of outbreak investigation are available from textbooks of epidemiology and public health and from the WHO. Strict adherence to 'case definition' is necessary to ensure that we are not mixing up different diseases making an artificial outbreak. Aetiological diagnosis would be needed in many instances, for which microbiological expertise must be available nearby. Sometimes, epidemiological investigations may by themselves identify the exact vehicle or mode of transmission without necessarily identifying the pathogen microbiologically.

Microbiologic skills and expertise

Some diseases such as polio, JE, cholera, malaria, typhoid fever, dysentery, meningitis, measles etc. must be confirmed aetiologically, since many other diseases can mimic them. If other diseases are also counted as cases, then the epidemic curve, the epidemiological linkages etc. will be distorted. Modern medicine cannot be practiced conscientiously without microbiological support service, at various levels. Thus, both for disease surveillance, prevention and control, and for quality in health care, appropriate and adequate microbiology must be available at various levels. In Karnataka, each District must have a microbiology laboratory, serving both clinical diagnostic functions and also epidemiological functions. This laboratory must be supervised by an MD in Microbiology. Human power development in the State must take into account this need. They should be supported and backed up by one state level public health laboratory which will also function as reference lab, training center, external quality assessment station, and center for reagent and protocol preparation, procurement and standardization.

Expanding disease surveillance to 'public health surveillance'

Since the ultimate goal is to prevent and control infectious diseases, we must address the broad channels of pathogen transmission under a comprehensive disease prevention programme. This requires other parameters to be under vigilant watch. These elements can be clubbed together into 7 items of surveillance. They are:

1. Disease Surveillance.
2. Capturing data on computers in the Health Department, in each district, on death (as reported to revenue/municipal agencies,) by age and perceived cause. This should be plotted for time trend.
3. Water quality assessment, regular periodic, by microbiology and chlorine content.
4. Vector bionomics, species, breeding, adult density, infection rate, insecticide sensitivity.
5. Food related infections or outbreaks.
6. Veterinary disease pattern, prevalence and rodent species and densities.
7. Antimicrobial sensitivity/resistance patterns.

The continuous generation of the above data, by District, will enable the DHO and his/her team to take effective measures to monitor disease trends and to design and apply methods of prevention/control of the spread of infectious diseases. Once these are in place, then the system can address issues like TB control, elimination of *Salmonella typhi*, prevention of vector breeding to prevent all vector borne infections and other public health measures.

Conclusion and summation

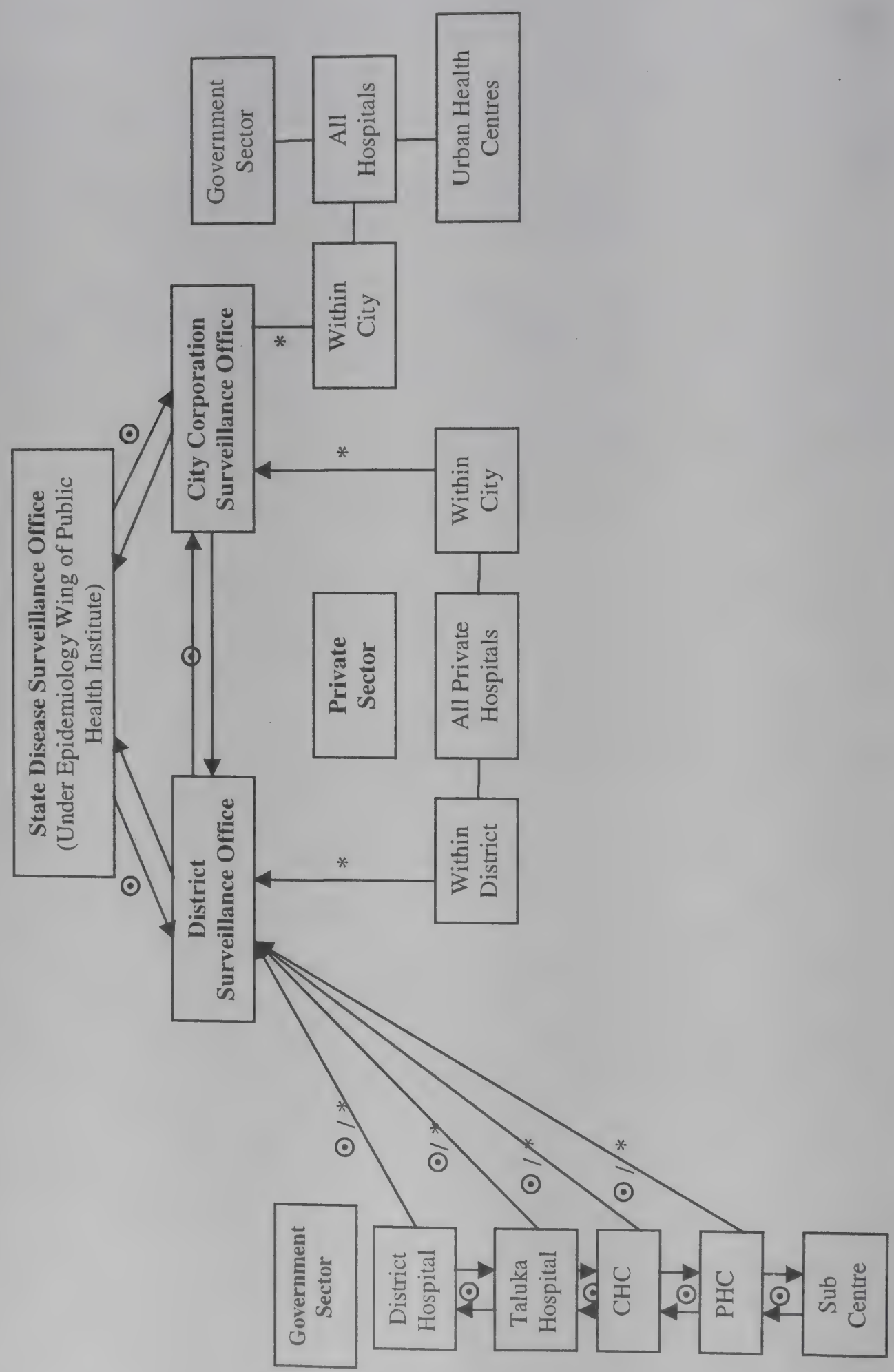
Currently, much energy and efforts are already being deployed under the name of statistics collection, time trend analysis or disease summary reporting. All these are essentially envisaged as tools in management. What we need is a system in which information is used not merely for statistics or for administrative planning and budgeting, but for disease prevention and control of outbreaks. For these purposes, a dynamic, effective and efficient, participatory and result oriented disease surveillance system must be established. The data generated by it will suffice for statistics and management of administration. In short, we must re-establish

the principles and practice of public health in disease control, as designed by ourselves, appropriate for our conditions, and supportive of the existing infrastructure and institutional networks. The district level disease surveillance seems to fit this need. The proof of the surveillance system can be had only after tasting its results.

Recommendations

- *An epidemiological disease surveillance system to be initiated in two districts in 2001 and then progressively expanded to cover the entire state over a period of two years. The purpose of the system is for public health action.*
- *The State Public Health Institute (PHI) will be adequately staffed and equipped with the State and District public health laboratories reporting to it.*
- *Recording, reporting and communication systems will need to function with accuracy and speed and lead to decision-making and response at the district level. This will require epidemiological skills at district and state level. A monthly bulletin will communicate information and analysis from the system.*
- *Training of staff to be planned and undertaken.*
- *The private and voluntary sector to be included in the coverage by the surveillance system.*
- *List of diseases and conditions included in the surveillance system to be reviewed and modified at intervals.*

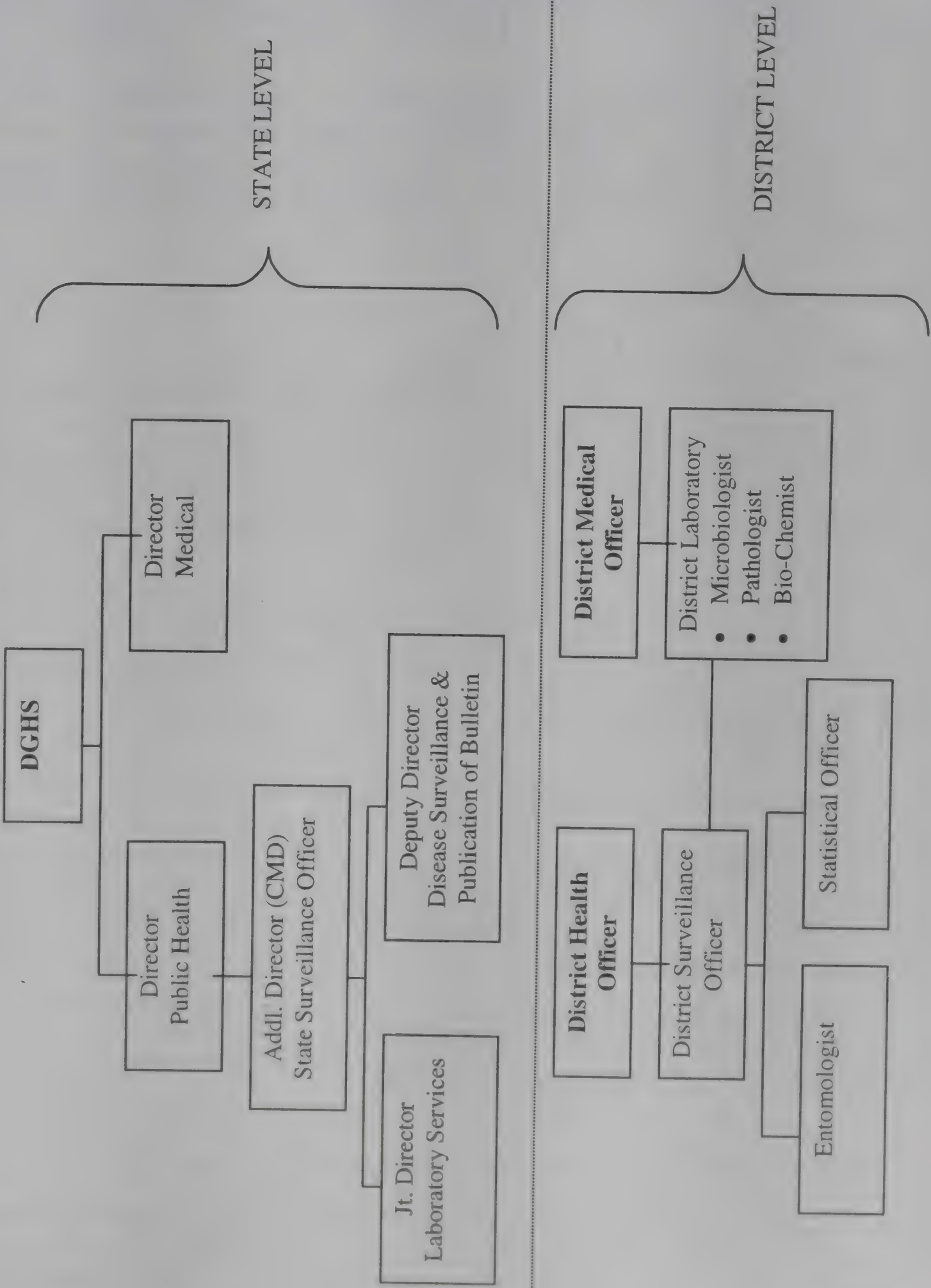
Chart - 1 : DISEASE SURVEILLANCE - ORGANISATIONAL CHART



* Reporting by post card
⊙ Reporting / communication by means other than post cards

Note: All medical college hospitals to report by post cards to district or city surveillance office

Chart-2 : STATE AND DISTRICT LEVEL ADMINISTRATIVE & TECHNICAL OFFICERS FOR DISEASE SURVEILLANCE, AND LABORATORY SERVICES



5.6 NON-COMMUNICABLE DISEASES

An early definition of non-communicable chronic diseases was that they included an impairment of bodily structure and /or function that required modifications in the patient's normal life and which persisted over an extended period of time. They often cause residual disability and require a long period of supervision, observation and care.

Most of these diseases cannot be cured but have to be relieved and managed lifelong. There are no reliable data available at present, regarding the prevalence of these diseases in the community in Karnataka. There is inadequate planning either to prevent or manage these diseases. The basis of our strategy should be to develop preventive strategies regarding the risk factors and to treat patients at or near their homes with proper referral systems for complicated cases.

5.6.1 DIABETES MELLITUS

Situation analysis: Burden of the Disease

There are only few surveys in Karnataka indicating the burden of the disease. The crude prevalence rate of Diabetes Mellitus Type II in Bangalore City is 13.2% between the ages of 20 to 80 years. (part of national diabetes survey). The Karnataka Rural Diabetic Survey conducted by Diabetic Club, Bangalore at B.R Hills, Sringeri, Hariharpura and Udupi, between the age groups 20-85 years gave a crude prevalence rate of 7.77% and age adjusted rate of 6.42%. The prevalence in men and women (7.83% & 7.71%) is almost the same.

Table 5.13 : Prevalence of Diabetes Mellitus

Place	N	Prevalence
B.R. Hills	1288	2.95%
Sringeri	1380	7.65%
Hariharpura	479	14.6%
Udupi	500	11.8%
Crude prevalence for women		7.83%
Crude prevalence for men		7.71%
Age adjusted prevalence		6.42%

This survey is an ongoing survey and subjects will be followed up for 3 years duration.

Apart from the large number of diabetics requiring treatment, it must be remembered that diabetes mellitus and high blood pressure are risk factors for coronary artery disease. Further, inadequate and improper treatment may result in complications like renal failure, cardiac failure, gangrene of the legs and retinopathy leading to blindness. The state or individuals/ families have been spending large amount of money for managing these complications, and hence primary and secondary prevention assumes great importance.

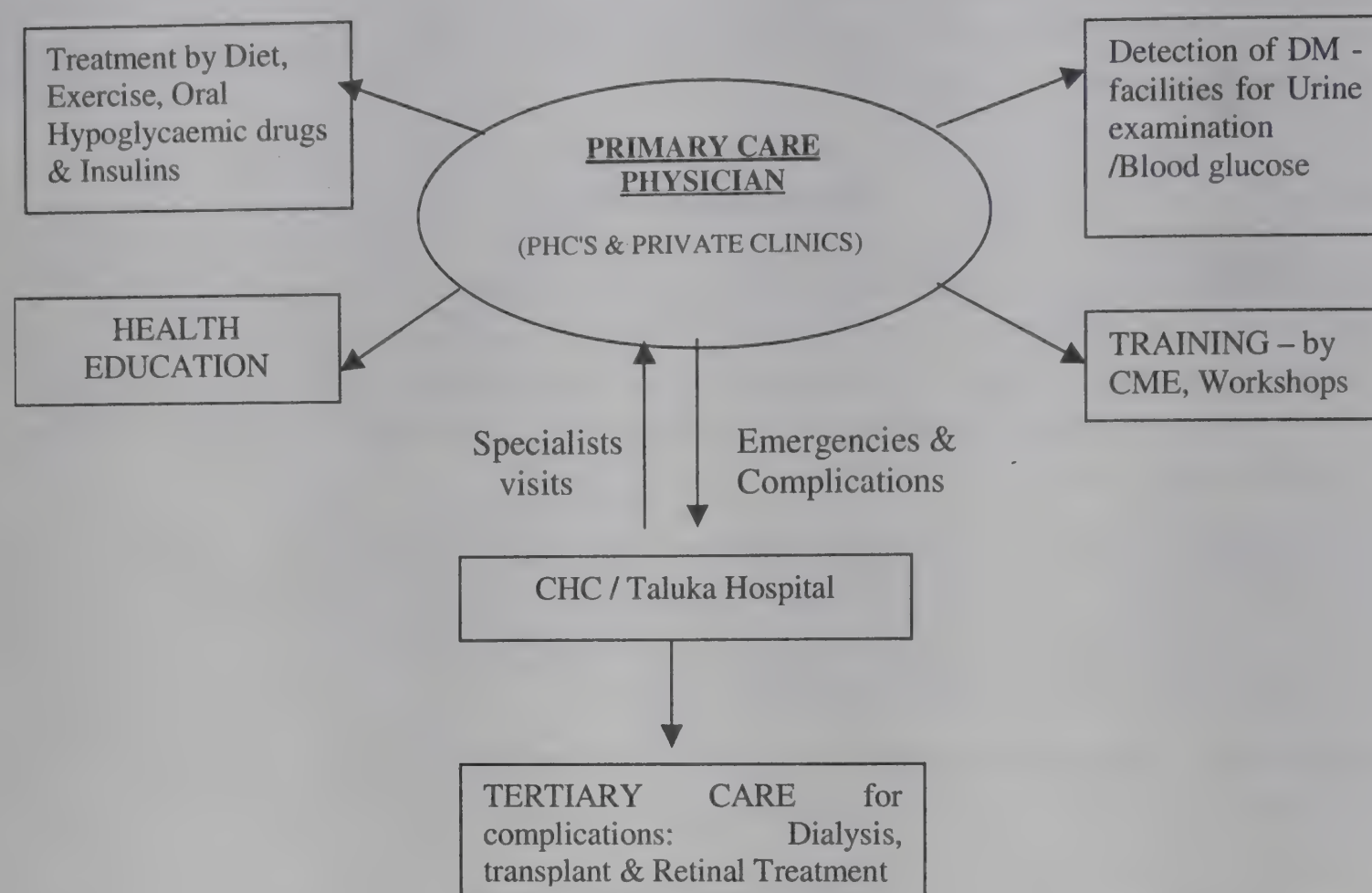
Prevention and care strategies: A population strategy aims to prevent the emergence of risk factors. Health education should particularly promote maintenance of normal body weight, through healthy nutritional habits and physical exercise. In the high-risk strategy, persons at risk would be advised to avoid alcohol that indirectly increases the risk further; avoid diabetogenic drugs like oral contraceptives; and reduce factors promoting atherosclerosis, like smoking. Secondary prevention measures recommended include good management of diabetes with patient education and self care.

Recommendations

- **Epidemiological surveys** may be undertaken in rural, and urban areas to understand the "burden" of diabetes mellitus and for proper planning for control and prevention of diabetes mellitus. The survey may be confined to the 20-90 year age group, using fasting blood sugar levels above 126mg/dl as the criterion. Surveys of hypertension, coronary artery disease and stroke may be undertaken along with diabetic surveys.
- **Laboratory facilities:** It is essential to provide minimum facilities to diagnose diabetes mellitus even at PHC level. This includes a colorimeter, glucostrips or Benedict's solution. The colorimeter is not costly, and the expenditure for glucose estimation is not more than Rs.2/-. The instrument may also be used for estimating blood urea and creatinine.
- **Constant supply of essential drugs** like insulin and oral hypoglycemic compounds are necessary. The conventional insulin may be used instead of costly ones like purified / human insulin except in certain special circumstances.
- **Continuing Medical Education (CME) and other training programmes:** Diabetes being a common disease, it is necessary that doctors / nurses and technicians are exposed to CME programmes regarding the early detection, treatment and preventive measures. The course may be of 3-5 days duration.
- **Referral System:** It is practical that most patients are treated at PHC level. Occasionally patients need to be transferred to the CHC / Taluka hospital for specialist opinion and treatment. The cases with emergencies like diabetic coma and gangrene should be transferred to higher levels of care. Other cases with chronic complications may be referred or specialist's visits may be organised at PHC's on regular basis. Some guidelines may be formed for referral / treatment (See Appendix).
- **Health Education:** Health education regarding early symptoms, complications, foot care, diet, exercise and prevention of diseases and their complications is required. There is a need for orientation courses for health workers / IEC staff regarding various aspects of diabetes mellitus with special emphasis on the above.
- In view of the burden of the disease, it is necessary to develop **District Diabetic Control Programme**. To start with, one Medical Officer for all non communicable diseases at the district may be designated to supervise detection, drug supply and health education programmes.

Appendix

DIABETIC CARE



5.6.2 CARDIOVASCULAR DISEASES (CVD)

Among all the non-communicable diseases, cardiovascular diseases taken together are the leading cause of morbidity and mortality. India and Karnataka are currently in the rising phase of an epidemic of cardiovascular diseases, propelled by a shift in the population distribution of risk factors. It would be prudent for the state to initiate measures to prevent cardiovascular diseases. The cost of diagnostics and therapeutics is high, with treatment being required on a long-term basis. This is unaffordable for most people. It would therefore be appropriate to spend resources on primordial and primary prevention, namely, avoiding or reducing and modifying risk factors associated with CVD. Attention should also be given to Rheumatic Heart Disease that is still widely prevalent in the country/state.

5.6.2.1 Coronary Artery Disease (CAD)

Situation analysis: Coronary heart disease is becoming a major health problem in India, reaching almost an epidemic proportion. However, there is no national programme on prevention in the offing. As per the current estimates at least 50 million patients are suffering from CAD. A population survey gave a prevalence rate of 10.9% in urban and 5.5% in rural males between the age group of 35-64 years. The corresponding figures for females are 10.2% and 6.4% for urban and rural populations respectively (Reddy K.S. Cardio-vascular diseases in India-World Health Statistics 1993).

Reliable measurements of prevalence may be difficult. There could be coronary artery disease without symptoms and ECG changes; ECG changes may be false positive for coronary artery disease. The hospital-based statistics especially from tertiary care hospitals may not represent the true picture.

It is realistic to survey coronary artery disease risk factors and design prevention measures. The non-lipid risk factors include diabetes mellitus, high blood pressure, smoking, positive family history, gender, body mass index, waist-hip ratio and life style. Lipid risk factors include total cholesterol level, triglycerides level, low HDLC and high LDLC levels.

The management and treatment of coronary artery disease is costly and may end up with costly investigations & management, like echocardiography, coronary angiography and coronary artery bypass surgery. Prevention of coronary artery disease is the need of the day and there has been a consistent decline in coronary artery disease in USA using preventive measures.

Recommendations

- *Epidemiological sample surveys regarding the prevalence of risk factors in Karnataka need to be conducted especially for diabetes mellitus, high blood pressure, positive family history, smoking etc., which will help developing prevention strategies. However preventive measures may be initiated now itself based on available data.*
- *Case detection and emergency management of ischaemic heart disease, to be done at PHC / general practitioner's level. The patient has to be transported to CHC / Taluka Level Hospital for confirmation of diagnosis and further management.*
- *Essential drugs like Nitroglycerine Tab, Pethidine, Morphine, parenteral diuretics, oxygen etc must always be available. Well-equipped ambulance services to shift the patient to referral centres should be available.*
- **Preventive measures:** *To achieve the goal of preventing coronary artery disease it is important to avoid major risk factors which is the basis of "success stories", in USA and other western countries.*
 - (a) *Controlling intake of salt, saturated fats and calories. Smoking is one of the most important risk factors. Smoking is seen in 75% of those with coronary artery disease and 80% of smokers have CHD. Community surveys conducted with urban and rural populations suggest that 50-55% of adult males smoke. Smoking control measures include increase in government taxes on cigarettes & beedies, ban on smoking in work and public places, ban on advertising and sponsorship of sports and games and cultural events by tobacco companies, limitation of tobacco crop subsidies and support for crop conversion to other crops and community education programme. (See section 5.10 for details).*
 - (b) *Increasing leisure time physical activity & practice of yoga and regular exercise.*
 - (c) *Increasing consumption of "heart healthy" food such as fruits, vegetables, high fibre cereals, oils containing poly & mono-unsaturated fats, (eg. mustard-rape seed oils, soya bean oil and avoiding hydrogenated oils)*
- **Proper control of diabetes, high blood pressure and lipid levels:**

Use of lipid lowering agents are proved to be beneficial. However, the need for life long treatment, with high cost of drugs makes it difficult for government or the patients to afford them.

Health education/ health promotion programmes have to be strengthened with special training for health staff on DM, HBP and CAD. Co-ordination with NGOs and private sectors is essential.

5.6.2.2 Hypertension

Situation analysis: Hypertension is a major contributor to cardio-vascular morbidity and mortality in India. There is paucity of large, authentic epidemiological studies in India, involving the age group of 18-80 years from different parts of the country. The prevalence rate varies from 1.24 to 11.59% in urban and 0.52 to 7% in rural areas. These studies have lot of shortcomings, in terms of differing examination techniques and diagnostic criteria employed. The study conducted by Diabetic Association of Karnataka in rural areas, involving the age group of 20-85 years, gives a crude prevalence rate of 16.35% and 18.12% for women and men respectively.

The cardio-vascular & cerebro-vascular complications in untreated hypertension are significant and management of these complications is costly. Hence there is need for proper guidelines and policies regarding the detection and management of the disease. Health education regarding prevention of disease and its complications is an essential part of health management.

Recommendations

- *There is need for multiple sample surveys to be conducted, to have some idea of the "burden" of the disease, for proper planning of our strategy for management of hypertension. There is need to take support of NGO's and specialist organisations. Estimation and recording of blood pressure must be a part of routine examination by the doctor.*
- *There is need for uniform method of taking blood pressure, criteria for diagnosis, evaluation of the patient and guidelines for management. A protocol for diagnosis and management may be suggested for all doctors working at various levels. (Tables I –IV). As majority of hypertensives are mild, they should come under the purview of primary health care either in urban or rural areas.*
- *Facilities: There is a need for well maintained standard mercury sphygmomanometers and with standard cuff in all centres. There is no need to buy any other type of sphygmomanometers. Routine investigations of urine and blood should be done in all PHC's. For investigations like ECG and chest X-ray the patients may be referred.*
- *Constant supply of anti-hypertensive drugs must be maintained. Less expensive drugs with minimum frequency of dosage are preferred which increases the patient's compliance (Table 4).*
- *Health education programmes are very essential for both primary and secondary prevention. Special stress on control of smoking, restriction of salt, saturated fat intake and reduction of weight has to be laid.*
- *There is need for conducting frequent continuing medical education programmes for doctors and health education workers.*

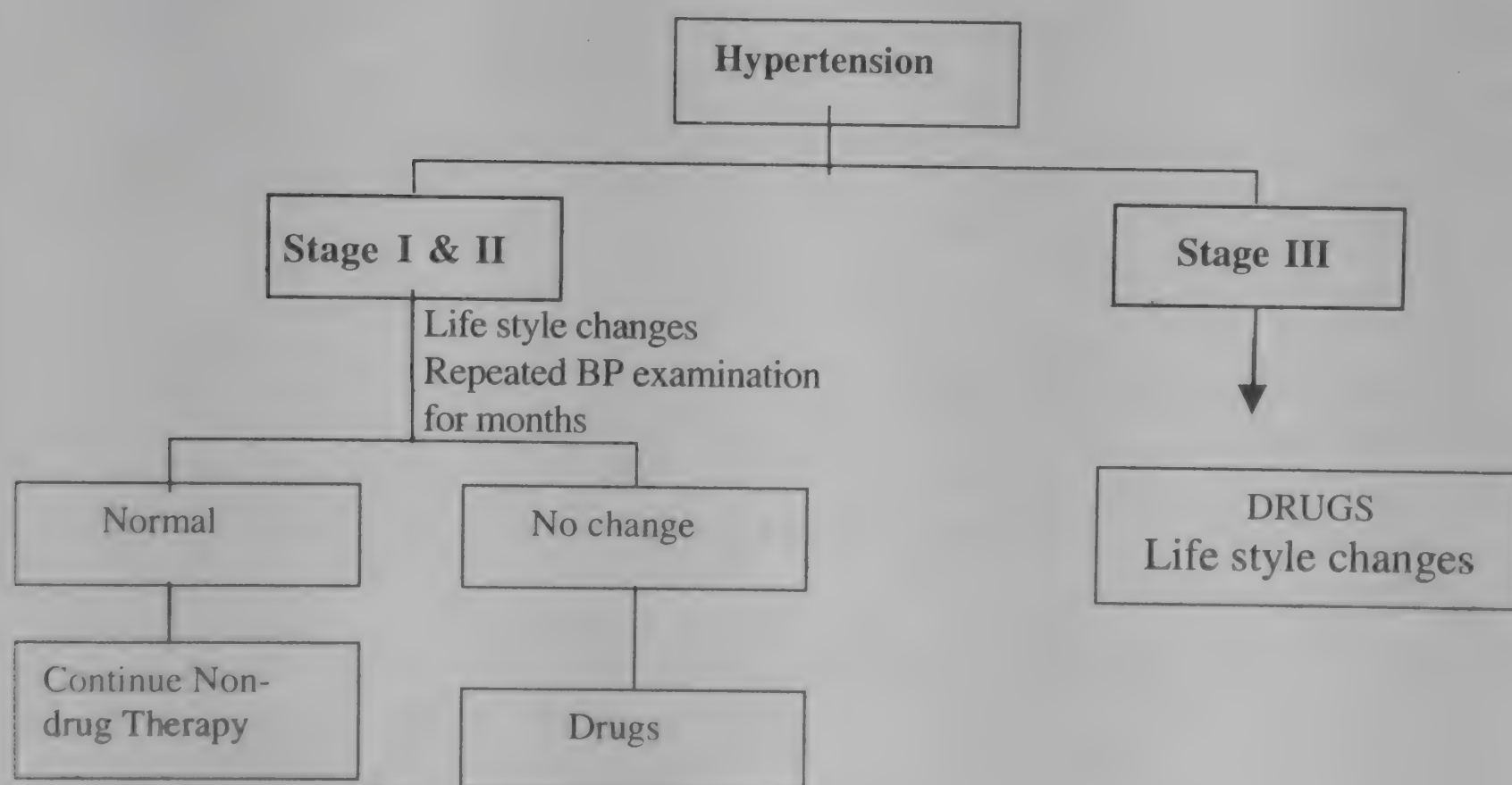
Table 5.14 : Classification and criteria for hypertension

CATEGORY	SYSTOLIC (mm Hg)	DIASTOLIC (mm Hg)
Normal	<130	<85
High normal	130-139	85-89
Hypertension:		
Stage 1	140-159	90-99
Stage 2	160-179	100-109
Stage 3	> 180	> 110

(Based on: 2-3 blood pressure readings taken at least on two visits after initial screening.)

Table 5.15 : Measurement of Blood Pressure

1.	Instrument	Standard mercury Sphygmomanometer cuff: Bladder – 12 cm x 35 cm Bladder should cover 2/3rd of length of the arm. Accuracy to be checked against standard mercury sphygmomanometer.
2.	Measurement:	First appearance of the sound – systolic BP (Korotkoff) Disappearance of sound – Diastolic
3.	To refrain from smoking / drinking coffee 30 min before measurement.	
4.	Position:	Supine or Sitting To keep the arm at the level of the heart.
5.	Measure the B.P in both arms and take the higher reading.	

Table 5.16 : Management – Protocol

1. Life style changes include stoppage of smoking, alcohol intake, reduction of obesity, Low salt and fat diet, exercise and relaxation.
2. If there is target organ involved, drug therapy to be instituted.
3. Refer: when there is secondary hypertention, resistant cases and emergencies after initial treatment.

Table 5.17 : Drugs

First line:

Thiazide diuretics	}	to be available at the Primary Health Centre.
Beta-blockers		
Calcium Channel blockers		
Alpha blockers	}	may be considered in referral centres.
ACE – inhibitors		

Other Drugs

Alphadopa
Hydralazine
Clonidine
Reserpine

5.6.2.3 Rheumatic fever / heart diseases

Prevalence : A reasonable estimate regarding the prevalence may be made by surveys of Rheumatic Fever (R.F.) and Rheumatic Heart Disease (R.H.D.) in hospital admissions and surveys of school children. The All India Collaborative study of school children 5-16 years of age in 1970 suggests a prevalence rate of 0.56%. A pilot study from Vellore showed a prevalence rate of 5.4 / 1000 and 6.0/1000 in rural and urban pupils respectively.

The antecedent Streptococcal pharyngitis causes rheumatic fever that may lead to rheumatic heart disease. Once the heart disease is established, patient has to be treated surgically or by other interventions and the financial burden increases. Bacterial endocarditis may complicate the RHD with dental and other surgical procedures.

Repeated attacks of R.F. may lead to R.H.D. Primary prevention includes use of penicillin to prevent streptococcal infection and Benzathine Penicillin 12 lakhs once in 3 weeks is advised. Antibiotics prior to and after surgical or dental procedure are to be used as bacterial endocarditis prophylaxis.

Recommendations

- *Rheumatic fever may be detected at PHC level and may be treated.*
- *Benzathine Pencillin should be supplied to PHC's for Rheumatic fever prophylaxis programme. (The duration of prophylaxis is controversial, but it is advisable to give penicillin upto 25yrs of age).*
- *Patients with R..H.D.s are referred to specialist / tertiary care hospitals for special investigations, surgery and other interventions.*

5.6.2.4 Thrombo-angitis obliterans (Berger's disease)

The disease is characterised by occlusive disease of the small and medium size arteries occurring in males in the age group of 20-40 years. Lower limb is usually involved. The symptoms and signs of occlusive disease will be present and gangrene of legs/toes are common. The exact cause of the disease is not known, but use of tobacco seems to an important cause. Treatment entails giving up of smoking, which prevents the disease. Use of vasodilators and lumbar sympathectomy may give temporary relief of symptoms. Gangrene of toes and legs needs amputation.

Recommendations

- *Discourage use of tobacco as a definite measure to prevent the disease.*

5.6.3 CHRONIC BRONCHITIS AND ASTHMA

Diseases of the respiratory system form one of the common causes for OPD treatment and inpatient admission. Chronic bronchitis and bronchial asthma form major contributors to morbidity. Reliable data regarding the prevalence are not available.

Bronchial Asthma

India alone has 20 million asthmatics; this is increasing every year. A survey conducted in Bangalore (1991) between ages of 15-65 years gives a prevalence rate of 2.99% (Omprakash and S.Rao) In majority of people, the disease starts at a young age. There are a number of precipitating factors that are responsible for the attack of asthma.

- (a) Inhalation of cold air – seasonal
- (b) Respiratory tract infections
- (c) Allergens: House dust, Pollens, Moulds etc.
- (d) Environmental pollution: Cigarette smoke, fumes of petrol, vapours and strong scents & perfumes.
- (e) Exercise
- (f) Drugs – NSAIDS especially Aspirin

Situation:

An acute attack of asthma is being treated mostly on an outpatient basis with administration of parenteral bronchodilators / steroids in most of the clinics with occasional admissions. The use of Ephedrine is very much reduced and metered dose inhalers (MDI) are not popular yet, especially in the rural areas. Nebulisers to treat the acute attack are not available in most of the rural centres. The patients are maintained on bronchodilator tablets. Preventive measures like avoiding allergens like pollen, chemicals, dust and food allergy and drugs are often discussed on individual levels.

Recommendations

- Every health centre / practitioner must have the drugs and facilities always available to treat asthmatics. Drug supply should include injections of Deriphylline, Aminophylline, Adrenaline. Steroids and tablets of Salbutamol, terbutaline.
It is desirable to supply pressurised aerosol nebuliser in every health centre, so that an acute attack may be relieved, even at subcentre levels.
- Preventive measures and health education may be addressed individually. Lowering environmental / industrial pollution should be taken up as a part of wider health issues.

Chronic bronchitis

Chronic bronchitis is the commonest lung disorder after tuberculosis and equally prevalent in rural and urban areas. The various factors causing this condition are:

- **Smoking :** It is the most common single factor leading to chronic bronchitis. Hooka and beedi smoking is as harmful as cigarette smoking.
- Occupational exposures: to organic and inorganic dusts or noxious gases.
- Air pollution: Industrial effluents, smoke from wood fires

- Infections: Recurrent viral infections
- Rarely, genetic and familial conditions

The condition is usually recognised even at the peripheral centres and clinics. Chest X-ray is occasionally prescribed to rule out associated pulmonary tuberculosis.

Recommendations

- *Every primary care doctor / medical centre must be able to handle cases of chronic bronchitis and its acute exacerbations. There must be a constant supply of drugs like bronchodilators (injections & tablets), nebulising solutions / nebulisers, antibiotics and oxygen.*
- *Preventive measures, health education regarding smoking and control of air pollution are important from individual / community's point of view.*

5.6.4 CANCER

Situation Analysis

With the increase in life expectancy and increasing exposure to certain chemicals, cancer has become a public health problem. Cancer is a major cause of death in India. Nearly 45,000 new cases of cancer are detected in Karnataka every year. It is estimated that the prevalence is about 1.5 to 2 lakh cases.

The common cancers in women are cancer of the cervix and breast cancer. With increasing tobacco use in the form of smoking and use of gutka, especially by men, oral, oesophageal and lung cancers are more commonly encountered.

There is need for looking at the problem of cancer in Karnataka in a broader perspective encompassing prevention, early detection, access to treatment and utilisation. Presentation of cancers often occurs in advanced stages due to a combination of lack of awareness, poor economic condition, fear of disease and inadequate diagnostic facilities.

Presently only one third of cancer patients receive treatment in specialised centres. There is need to establish more cancer treatment centers with low cost, high quality care. Involvement of the non-governmental agencies is very crucial.

Plan of Action

- The Director, Kidwai Memorial Institute of Oncology has prepared comprehensive recommendations for the Karnataka State Cancer Control Programme, which is quite self-explanatory and practical and should be acted upon (Appendix - 1).
- However, this booklet covers only government departments catering to oncological care. A general view must be taken to encourage non-profit oncological institutions. Private-for-profit institutions must also be taken into confidence as they also cater to sizable part of the population.
- Government should consider exemption from taxation on anti-cancer drugs and certain sophisticated oncology equipments such as Telecobalt units.
- The government of India under the cancer control programme gives some grants to establish radiotherapy centers and cancer detection centers in government hospitals, medical college hospitals and non-profit

medical establishments. Karnataka has not fully utilized this share. This must be utilized to the maximum extent, as it will help to have detection and treatment centers in all district head quarters. **District Cancer Control Programmes should be developed.**

- Oncology care should be comprehensive. Patients in their terminal stages need close nursing attention and an empathic treatment. The concept of hospices must be encouraged in all divisional centers with the help of voluntary organisations. The Government should help them in granting the required land and also financially assist these centers.
- As half of all new cancers diagnosed are tobacco related. The government should discourage tobacco production, manufacture of tobacco products and sales, through education and legislation. (see 5.10).
- It is advisable to encourage the use of well-established non-allopathic methods such as ayurveda, homeopathy, siddha, yoga and naturopathy, at least in the centers of excellence established for oncology care. This can be done scientifically with a research approach and documented. However, the exploitation of gullible people by quacks for these chronic diseases must be disallowed.
- With this multi faceted approach, and through imparting oncological concepts at primary & secondary health care levels, along with establishing few zonal centers of excellence, one can work towards satisfactory cancer control and care.
- The cancer registry is doing good work and must be further developed.
- The programme should have a strong component regarding prevention of exposure to risk factors and to early detection.

Cancer control among women

Special attention is needed, as women tend to seek treatment late and come in advanced stages of the disease. Health education, early detection and management of the more prevalent cancers such as cancer cervix, breast and oral cancers by trained health personnel should be taken up as an integrated programme. In addition, women can be taught to conduct self-examination of the breast.

1. Health education programmes regarding commonly occurring cancers, and their aetiological and risk factors, such as tobacco and alcohol use; poor reproductive hygiene; techniques for prevention and importance of early detection should be undertaken. Health promotion should facilitate safe hygiene practice, safe sex practice and also encourage women to demand visual inspection of the cervix from the trained health workers.
2. Screening and early detection programmes for cervical cancer as recommended by KMIO should be effected by ensuring the following:
 - promote early detection and down-staging through appropriate screening methods.
 - target women 35-64 years of age.
 - maintain a cancer registry
 - referral and follow up services.
3. Women health personnel (both health workers and lady medical officers) should be responsible for and trained to perform visual inspection of the cervix and triaging of its appearance into normal, abnormal and suspicious of malignancy; and make appropriate referrals.

- They should be trained to sterilize the gloves and specula. They should be provided with a torch, sufficient specula and gloves, and for those performing cytology with slides, a slide box, a glass marking pencil and fixative solution.
 - The screening can be performed at the PHC, Primary Health Unit, and the village school or at the homes of the women.
4. For further investigations samples required (Cervical smear / Fine Needle Aspiration Cytology) can be drawn at the PHC and sent to district laboratories for investigations. Surgeries and chemotherapy can be performed at FRUs. Only cases requiring radiation need referral to specialized centers.
 5. Prior to the launching of public health efforts to prevent and downstage cervical cancer, it is critical to ensure the availability and accessibility of therapeutic services- early detection, treatment, referral networks, and palliative care. It is no use empowering women, if diagnosis, referral and treatment are not guaranteed.
 6. Treatment of early stage cancer is not less expensive, or less technology intensive, than late stage disease; however, it is more effective because of higher rates of survival and cure. Bleeding and foul-smelling discharges which occur in late stages can be avoided.
 7. Palliative care can ensure that unacceptable, unnecessary suffering can be avoided. Nearly 80-90 per cent of pain can be managed using drugs, which cost less than aspirin. Early stage disease can be successfully treated by either surgery or radiation therapy, but in the advanced stages, only radiation therapy and palliation are useful.
 8. Public-private partnerships in all these areas are essential. Eg. Specialists to augment services of government doctors; radiation therapy totally free or at minimal costs by using the facilities of private institutions at nighttime or during other lean periods / holidays.

Recommendations

• **Primary prevention**

- *Health promotion programmes in schools and colleges and for the public to reduce use of tobacco, and education regarding proper food, personal hygiene and early warning signals.*
- *Intensive anti-tobacco campaigns by doctors, nurses, paramedicals, teachers, social worker and anganwadi workers and voluntary organisations*
- *Orientation programmes in the problems of tobacco use for all people's representatives and other decision makers.*
- *Legislation to reduce tobacco use and other measures. (See Chapter 5.10)*

• **Secondary prevention**

- *Have cancer detection camps with the help of voluntary organisations to create awareness and detect cancers at early stage.*
- *Have cancer detection units in hospitals*

• **Tertiary prevention**

- *Have multidisciplinary treatment facilities at Kidwai and other identified centers: surgical, medical, radiation oncology and supportive systems*

• **Palliative care for terminally ill cancer patients.**

- *Have a District Cancer Control Programme, consisting of a field unit and a clinical team, with staff trained at Kidwai Memorial Institute of Oncology and located at the District Hospital.*
- *Cancer Registry to be expanded and link later to the epidemiological disease surveillance system.*

Appendix I

KARNATAKA STATE CANCER CONTROL PROGRAMME PROPOSED COMPREHENSIVE INTEGRATED MODEL

I. Preamble

The need for early detection of carcinoma cervix in India in order to decrease mortality is well known. No significant progress has been made until now, probably due to lack of a suitable model for India. In spite of extensive work done in several parts of the country, conventional models have failed to produce the desired results. Hence there is a need for innovative methods to suit our socio-economic conditions.

The Conventional Models

- **Opportunistic Screening:** This type of screening is unlikely to succeed in the Indian scenario as most of our rural population are illiterate and have no access to such screening facilities.
- **Organised Population Based Screening:** WHO recommends this project for developing countries – atleast once in a lifetime screening for women between 35 & 60 years and covering atleast 80% of the population.
- **Visual Inspection Method:** This method was studied in KMIO in a ICMR – WHO project using the existing health infrastructure. There were many problems encountered.
 - a. The existing health infrastructure is already over burdened with National and State health projects. Hence the personnel were very reluctant to accept any more additional programs. The cancer control projects need commitment in terms of time and dedication.
 - b. To improve efficiency, NGO's were involved to educate the people and motivate them to "demand service" from the existing health infrastructure. Unless the NGO's involved are totally dedicated and committed, it would not be practical to apply the programme all over Karnataka. NGO's are ready to involve themselves in a time bound programme only.
 - c. Many women were very reluctant to undergo visual inspection. The compliance rate was very low.

II. The Problems With Existing Models

1. Efficiency

COST	PAP TEST
No. of tests (each taluk)	40,000 women
Cost per PAP smear	Rs.20 (minimum cost)
Total cost for one taluk	Rs.8.0 lakhs
Total cost for one district of 6 TQ	Rs.48 lakhs
Detection rate @ 40/100,000	16 patients / taluk

Effective cost per patient for single pap test only: Rs.50,000.

Other expenses: Staff salary + additional TA & DA, transport etc

Impression of ICMR studies: This method is unacceptable on cost effective basis.

2. Logistic Problems*(For the detection of 16 patients of carcinoma cervix in a year)*

Total number of population to be examined in a taluk	40,000
@ 50% compliance rate for examination	20,000
Effective working days	220
No. of patients to be examined per day	91
No. of doctors needed on duty (@ 4 pts per hr.	3

Other requirements:

Nurses, survey team, education team, attenders, drivers,

Cyto-technicians

Transport?

Stay?

Organisation of camp site?

Salary burden of entire team?

Repeat visit team?

Putting together dedicated team of KMIO, PHC's and NGO's etc

3. Ethical problems

With organised screening programme less than 3% are expected to have dysplasias, where immediate treatment may not be necessary, but they need to be followed very scrupulously. For a population of 40,000 eligible female population, 1200 persons are expected to have dysplasias. This burden increases every year. After 5 years this would become an unmanageable load. This would lead to an ethical problem because we have created a "fear" that some thing is not normal and cannot provide the adequate treatment facility at the same time. We would have created a population with "worry", who otherwise would be living happily.

Summary: All trials based on Existing Models have been unsuccessful in India!!

It has lead to only intense and prolonged scientific discussion with almost no benefit to the community.

III. PROPOSED COMPREHENSIVE-EDUCATION, EARLY DETECTION AND TREATMENT-INTEGRATED MODEL FOR KCCP.

This model is comprehensive because it encompasses the concepts of education for cancer awareness and prevention of disease; specified, regular, fixed timeplace cancer detection clinics for **early detection**; and provision of **cost-effective treatment** as near to the patient's home as possible.

It is integrated because it involves participation of existing Government health infrastructure, Panchayathi Raj system, NGO's and KMIO.

It is in a way incorporation of practical features of various models, that are described earlier, to suit our set up.

A. THE BASIS OF CONCEPT

"The answer for all our national problems-the answer for all the problems of the world-comes from a single word. The word is education."

- Lyndon B. Johnson.

“You can only cure retail, but you can prevent wholesale.”

Main theme is “Population based systematic health education with early detection clinics”. This is a significant paradigm shift from “ACTIVE INTERVENTION” TO “ACTIVE MOTIVATION and SELF EMPOWERMENT”. With this model primary thrust is motivation in order to make people take measures to prevent cancers (and other diseases by “bystander effect”) and come soon for examination resulting in early detection. The message that will be conveyed to the person in the remote village – **“you are responsible for your health”**.

Power of Panchayati Raj System:

- Karnataka Panchayati Raj Act of 1993 has a provision which says that gram panchayats may also carry measures which are likely to promote health, safety, education or social and economic well-being of its inhabitants.
- Subsequent notification of July 1994, listed schemes for Zilla and Taluk panchayats with transfer of funds to specific areas. Forty two schemes have been identified under the Zilla Panchayats, one of which is cancer control.
- July 1994 notification also brought PHC's under the control of Zilla Panchayats.

B. COMPONENTS:

I. FIELD UNIT AT DISTRICT CENTRE + DISTRICT HOSPITAL (ZILLA PANCHAYAT LEVEL)

- a. Education Team:** The team would be located at the district hospital and would be minimum of two in number. But the operational level of the unit would be at the taluk panchayat level, which is 6-8 in number, under each district. The team will visit each taluk under the district, 2 days every month. Each taluk panchayat will have 40-50 Gram panchayats. From each gram panchayat 1 person per day, will attend the educational session. The person would be a health worker / Anganwadi worker / school teacher / Agricultural extension worker / NGO's / social worker / elected member as decided by the particular gram panchayat. Those who attend the education camp would be given simple pictorial pamphlets to be given to the village person. The next batch will give the feed back about the action taken by the previous batches. This will set in place an effective feed back system to assess the effect of cancer control programme.

The mode of education would be group type. The time of education can be coincided with existing taluk level programs for the gram panchayat members. In addition bus exhibition, one to one interviews, flip charts, pamphlets, encouragement of “word of mouth”, media (news paper, radio, TV etc.) would be employed.

One education team will have 1 person from KMIO to co-ordinate the whole operation and 3 persons from Zilla panchayat.

- b. Clinical Team :** This team will be formed from the existing staff of district hospital, who would be given training at KMIO if necessary. The other facilities to be organised from the existing infrastructure of District Hospital are:

- Facilities for detailed clinical examination of oral cavity, breast and cervix and Pap smear.
- Other investigations (based on symptoms).

- Treatment facility for diagnosed cases.
 1. Radiotherapy at PCC's
 2. Surgery by district hospital surgeons trained at KMIO.
 3. Chemotherapy by trained staff.
 4. Active Pain relief measures by trained staff.
 5. Referral to KMIO if absolutely necessary.
- Dysplasia and leukoplakia clinic to keep the patients on follow-up.
- Computer network to co-ordinate the programme instantly.

II EARLY CANCER DETECTION CLINIC (ECDC): The team made of district and taluk hospital personnel will attend cancer detection camps at taluk level in order to "Reach the Unreached". The duration of camp could be 1-2 days every month depending on the response at each taluk under the district. The concept is – provision of clinical facility for the persons who re motivated by the education, who otherwise do not know where to go or what to do. Once the education process is initiated, it is obligatory to provide such a facility. No attempt should be made to have organised screening procedure that has ethical implications and opportunistic screening which is not cost effective.

The purpose of the ECDC team

- a) Provide early detection facility for the village individual at a reasonable distance;
 - b) Act as reinforcements and catalysts to activities of PHC's and taluk hospitals. The ECDC camp can be coincided with the visit of education team camp.
- III RANDOM SURVEY TEAM:** This is done at selected places in random fashion, covering the Gram Panchayaths, villages and PHC's / Taluk hospitals, to monitor the effect of control programme. Already existing Management Information Evaluation System (MIES) of Govt. of Karnataka can also collect the feedback information.
- IV ADVISORY COMMITTEE AND WORKING COMMITTEE:** These committees will help in providing finances, organisation of education and ECDC camps.
- V GRAM PANCHAYATS:** The individuals from the Gram panchayats who have been trained will educate the other personnel of gram panchayats. They in turn will educate the village individuals. The personnel who can undergo the educational training are:
- a) health workers
 - b) anganwadi workers
 - c) school teachers
 - d) agricultural extension workers,
 - e) elected members
 - f) NGO's decided by the gram panchayats.
- VI PHC's AND TALUK HOSPITALS:** Taluk hospital will be a nodal point for education and ECDC camps. Both PHC's and Taluk hospitals will provide the visual inspection and PAP smear facility to the individuals who seek clinical examination. The PAP smears will be then sent to the cytology lab at district hospital. ECDC's will act as reinforcements and catalysts to the activities of PHC's and taluk hospitals.
- VII BASE UNIT AT KMIO:** The Base Unit at KMIO will initiate, monitor, analyse and coordinate the programme and train the personnel. Network of computers will facilitate the acquisition of data.

VIII DIRECTOR KMIO: The Director of KMIO will be in charge of the entire programme and report the progress to the Government of Karnataka.

IX HEALTH SECRETARY TO GOVT. OF KARNATAKA: Secretary, Health and Family Welfare, Government of Karnataka will help to co-ordinate Government Health infrastructure with KCCP. He will also coordinate between the feedback information received from KMIO and MES.

C. METHODS:

Three-pronged strategy will be adopted.

- **Education to use proper food items and personal hygiene:** Fresh vegetables and fruits decrease the incidence of cancer very significantly. Effective slogans will be coined to convey the message.
- **Anti-tobacco education programme:** Enough experience has accumulated by KMIO regarding this. Existing Anti-Tobacco Cell at KMIO will be used to organise this. Anti tobacco education in Kolar District spanning over 3 years, has shown significant decrease in the use of tobacco.
- **WHO warning signals:** Symptomatic persons, especially having Persistent and Progressive Symptoms need to attend the PHC / Taluk hospital / field unit at district centre for examination. Awareness encourages people to come in the beginning of symptoms resulting in Early Detection.

D. ADVANTAGES

- Cost would be phenomenally minimal versus other methods.
- Logistically easy to maintain a team in one permanent place.
- The field units of District centres can be established immediately with minimum personnel and cost, at all the districts of Karnataka to cover the entire 5 million population.
- Cumulative salary burden and overheads would be low.
- Can be started simultaneously in strategically different places with very large population coverage.
- No ethical problems since people come on their own and are advised follow-up.
- Can be easily duplicated in any other place and disease.
- Will reduce the patient load at KMIO.
- By “bystander effect” there will be influence on incidence of:
 - Cardiovascular disease due to anti-tobacco and diet education.
 - AIDS due to sexual hygiene education
 - Nutritional and infectious diseases due to diet education.
- Once this model is established all over Karnataka, it will form a template for engraftment of any other control programme to be implemented in Karnataka.

E. IMPLEMENTATION

The model is suitable to be implemented over entire Karnataka. But it is desirable to take this as a pilot project at 3 or 4 places such as Mandya, Gulbarga, Kanakapura Chikkamagalur. Since these places have treatment centers and population based programs, it is easy to implement at these centers. After 6 months to 1 year, it can be extended to entire Karnataka in a phased manner.

5.6.5 OTHER NON-COMMUNICABLE DISEASES

5.6.5.1 ENDEMIC FLUOROSIS

Endemic fluorosis is chronic fluoride intoxication caused mostly by ingestion of water containing high concentration of fluorides. It is a well-defined clinical entity characterised by dental and skeletal changes.

The safe level of fluoride in potable water in India is between 0.5-0.8ppm; 1 ppm is the maximum permissible limit. When fluoride content is high the fluoride gets deposited in the teeth and skeleton.

Epidemiology

The disease is prevalent in 17 out of 25 states in India, 200 million people are afflicted and more than 400 million are exposed to the risk of developing endemic fluorosis. In Karnataka, it is mostly found in north Karnataka districts, Kolar and some parts of Tumkur district. In a house to house survey conducted at Mundargi Taluka of Dharwar District (presently Gadag district) above the age of one year, the crude prevalence rate was as high as 75% for dental fluorosis and 45% for skeletal fluorosis (Maiya M., Hande H.S. et al JAPI 1977). The three villages surveyed are hyperendemic and fluoride concentration of well water varied from 5.4-8.74 ppm.

The disease is common in hot and dry climate and higher prevalence is noted with higher concentration of fluoride in water, longer duration of exposure in males and hard manual workers. The hardness of water protects the population from the disease.

Dental fluorosis

Popularly known as "mottled enamel" is the earliest and easily distinguishable sign of fluorosis, especially in children. It is taken as an index of endemicity. The teeth show chalky white deposit, brownish discoloration, pitting of enamel with chipping of edges and teeth may fall prematurely.

Skeletal fluorosis

It may be asymptomatic or may present with vague symptoms like joint pains, pain in the neck and back. It may be mistaken for rheumatoid arthritis. The well-established cases show postural defects, limitation of movement of the spine and exostosis easily appreciated in the tibia and spine. Recently, genu-valgum deformity and secondary hyperparathyroidism are described. Fluorosis of spine may compress the spinal cord and various neurological deficits like, radiculopathy, paraplegia or quadriplegia may disable the patient.

Radiological changes are diagnostic and seen in the vertebral column, pelvis and forearm as osteosclerosis, osteophyte formation and calcification of ligaments

Management

There is no specific treatment; preventive aspect of endemic fluorosis is of paramount importance. The effective measure is to provide the rural population with water not containing more than 1 ppm of fluoride (preferably 0.5-0.8 ppm)

There is a fundamental requirement for surveying and mapping areas with a high content of fluoride in water in the dug wells or bore wells throughout the state, so that appropriate preventive measures may be undertaken. Many such surveys are conducted by the Geological Survey of India in various parts of the country.

Surface water supply

Usually surface water contains less fluoride than ground water. The water may be supplied to the village from

rivers, dams or canals. This scheme was executed near Nagarjuna Sagar Dam in Andhra Pradesh. In Mundargi the water from nearby Tungabhadra river is utilized (fluoride concentration 1 ppm.)

Deep bore drinking water technology

By increasing the depth of the well, the fluoride content of water will be maintained at 1 ppm. The technology of deeper tube well is the most practical, cost effective and acceptable to the people (Teotia, Indian J. Med. Research 1987).

Defluoridation of drinking water, using various chemicals is not cost effective.

Calcium is the strongest antagonist of fluoride toxicity. The individual who is exposed to high fluoride water should receive a minimum of one gram of calcium per day; this may be increased to 2 grams to lactating mother.

Recommendations

- *Survey and map the dug wells and bore wells in suspected areas for the fluoride content.*
- *Make available drinking water with less than 1 ppm of fluoride to the people living in areas where the fluoride content is more than 1 ppm. Surface water (rivers, dams and canals) has less content of fluoride.*
Deep bore water also has less of fluoride content.
- *Individuals exposed to high fluoride content of drinking water may be given one gram of calcium per day (2 grams to lactating mother).*

5.6.5.2. HANDIGODU DISEASE

Handigodu Disease is a peculiar disease of the osteoarticular system, which is geographically restricted to Shimoga and Chikkamagalur districts in Karnataka. Besides the geographic localisation, the disease predominantly affects the Chanangi and Chalwadi sections of the Harijan community.

The disease was first identified at Handigodu village in Sagar Taluk of Shimoga district in January 1975. 362 persons have been affected in Shimoga district (until 1997) and 349 persons in Chikkamagalur district until Sept. 2000, since the first appearance of the disease.

Handigodu disease is a genetic disorder inherited mostly in an autosomal dominant pattern affecting the skeletal system with basic defect of dysplasia of epiphyses at the spine, hips, knees and other sites on the long bones. Affected heterozygotes are usually present in arthritic and dysplastic forms and segregate in the same family. Besides the genetic aetiology, there is a strong nutritional, metabolic, endocrine and bone histomorphometric evidence that, deficient dietary intakes and associated secondary hyperparathyroidism had aggravated the disease. A study carried out indicated a marked deficiency in the intake of dietary calcium in the population surveyed.

Clinically and radiologically the earliest onset is 5-10 years of age. At this stage the disease is largely asymptomatic but on specific examination, difficulty in sitting cross-legged and squatting is observed. Majority of the patients present in young age. The disease has a gradual onset and a progressive course. In late stages secondary osteoarthritic changes in hips and knees lead to incapacitation and patients develop flexion deformities of the hip and spine.

The Sagar General Hospital has a 10-bedded ward for treating Handigodu Syndrome patients. Rehabilitation measure has been undertaken in Shimoga district but the same is not available for those affected in Chikkamagalur district.

Treatment and Prevention

Cases having mild to moderate disability are treated with analgesics, steroids and rest. Those with severe disabilities need surgical correction. The quality of life after operative procedures is poor. Physiotherapy should be provided to the affected individuals.

Genetic counseling regarding marriage, child bearing, risk estimates on the basis of pedigree analysis should be provided. The affected should be advised about dietary supplementation with calcium.

Recommendations

- *Early detection, physiotherapy and surgical correction facilities are to be provided to all the affected people.*
- *Genetic counselling regarding marriage, child bearing, risk estimates on the basis of pedigree analysis should be provided*
- *Vacancies in the Handigodu Disease Unit at Sagar Hospital to be filled up and made fully functional along with the mobile unit. Disease surveillance system should be introduced.*
- *Patients with Handigodu Disease should be provided with supplementary calcium in dietary and tablet forms.*
- *Socio Economic rehabilitation of the people disabled due to Handigodu Disease.*

5.7 ORAL HEALTH

Oral health constitutes a major component of the health care system. However, with inadequate recognition it still receives relatively low priority in health planning and financing, in the country and state. This is mainly due to the following reasons:

- Lack of awareness among the public and health policy makers about the high prevalence, severity or consequences of oral diseases.
- Oral diseases are not life threatening or severely debilitating initially. They are not regarded as serious health problems by the government and community.

There is no State level survey of oral diseases but, based on scanty reports, the following diseases are commonly seen:

- **Periodontal disease:** found in 90% of the population resulting in early loss of teeth.
- **Dental caries:** seen in 70% children upto 12 years.
- **Oral cancers:** prevalent in 18-20 per 1,00,000 population (dealt with separately).
- **Fluorosis:** seen mostly in north Karnataka districts, Kolar and Pavagada.

Facilities available and situation analysis

Oral health services are offered by the government, private and organised sectors, like industry and military establishments.

Government Sector:- The Department of Health and Family Welfare has established Dental Clinics in District and Taluka headquarters. Recently the Government has published new draft rules, in which it proposes to redesignate the above posts as follows:

Existing designation	Proposed designation
Assistant Dental Surgeon	Dental Health Officer
Deputy Dental Surgeon	Senior Dental Health Officer
Dental Surgeon	Chief Dental Health Officer

The number of sanctioned posts for dental doctors is only 201, for service at various levels from district hospitals to PHCs. Equipment for dental work is inadequate, for example, there are dental clinics without dental chairs. Most equipments require repair and maintenance.

Services rendered are primarily dental extraction and minor oral surgical procedures. Even where facilities for permanent restoration and prophylaxis are available these are not offered to the public due to nonfunctioning of units and irregular supply of permanent restoration materials. Preventive measures, including oral health education, are not given any importance in government clinics.

There is no full time person at the Directorate of Health Services in charge of coordinating the organisation and development of oral health care services and dental education.

The number of **private dental practitioners** is increasing with the large number of graduate turn over from 41 colleges in the state. The **dentist: population ratio** of 1:44056 of 1980's has been changing fast, though we do not have the exact figures for 1990's.

More than 80% of dentists serve 30% of the population based in the urban areas. The people in the rural areas have no access to oral health care. The "out of pocket" spending especially from middle class / poor is a matter of concern as dental treatment in private sector is expensive.

The **organised sectors** like industrial houses and military establishments have dental clinics managed by Dental Surgeons.

Dental Colleges

- There are 41 dental colleges in the State of which 40 are private. Most of them offer BDS and some offer MDS degrees. The total intake of students is 1552 annually. The facilities and staff provided by colleges are not always adequate; they are under review by the Dental Council, University and the Government. Trends in recent years show that a proportion of dental seats remain unutilized, indicating excess of supply over demand. The quality of many colleges needs to improve
- Auxiliary training for Oral Hygienists and Dental Laboratory Technicians is offered by the Government Dental College and also some private colleges. The course is of 2 years duration.
- Mobile Dental Units / Ophthalmic Units: There are 4 units mostly concerned with school health programmes for each zone. These are not effective.

Dental Manpower Planning: In spite of the large number of dental colleges and dentists in Karnataka, the oral health care picture in rural areas has not changed much over the years. The situation is mainly due to unwillingness of dentists to go to rural areas and biases in training. Students are trained in curative, individual oriented approaches rather than in community oriented, preventive education methodologies.

The human resource strategy must address the following:

- Oral health needs and demands of the community.
- Proper distribution and utilisation of manpower to effectively serve the population.

The great majority of people report to dentists/ hospitals for relief from pain, extraction of teeth or simple restoration and prophylaxis. Do we need highly trained personnel for this? It is time to think in terms of primary dental health care workers, hygienists and dental nurses for effective coverage of oral health care in the community.

Primary dental health workers or auxiliary health care workers are permitted to carry out certain treatment procedures to relieve pain and suffering for common oral emergencies. They are an integral part of the health team and are suitably trained for one or two years. As utilising their services involves creation of additional posts, currently it may be more practicable to train the primary health care doctor for a short period in simple skills. Utilizing auxiliaries may be considered in the longer term.

Since 42% of the population or children, it is worthwhile developing school dental health programmes. There is need for school dental health nurses.

Services at various levels:

All vacancies of dental surgeons and supportive staff at various levels are to be filled.

- I. **PHC Level:** At this level, procedures like simple extraction of shaking teeth, temporary restoration and oral prophylaxis can be done. It is practicable to train the primary care physician in the above mentioned procedures. Dental clinics are to be run by auxiliary dental health personnel (dental hygienists with expanded function later).

Equipment:

- Dental Chair – Portable Dental chair which is used often in “camps” is sufficient (cost about Rs.5,000).
- Dental Kit containing extraction forceps, local anesthetic spray, clove oil and temporary dressings.
- Education materials like Posters / Slides: Oral health education should be used as an integral part of the duty of auxiliary dental health personnel.

- II. **Taluka Level :** This is a referral centre for PHCs and school health dental programmes. The personnel should include a dental surgeon and a dental technician / dental hygienist. The services of an oral surgeon may be obtained on payment basis to take care of trauma and orofacial problems.

The centre should be able to provide all services including specialist services and Oral health education. The dental surgeons must be able to supervise the work at PHC's.

III. District Level:

- **Equipment and personnel:** Dental clinics should have all equipments and facilities to render all specialised work apart from routine work. It should possess all facilities for management of maxillo-facial injuries, prosthetic and restorative services. Dental surgeons with post-graduate qualification are to be posted apart from District Dental surgeon (Chief Dental Health Officer). The specialists include conservative dentists, orthodontists, periodontists and oral surgeons etc. The Government may consider appointment of private dental specialists, if necessary, on a payment basis.

- **Training centres:** The hospitals should also function as training centres for dental auxiliaries and primary dental health education.
 - **Referrals:** District Dental Units should serve as specialised centres for all special work.
- IV. Directorate Level:** A designated post to be incharge of dental service and education who could supervise the oral health of the state and also dental education.
- V. School Dental Health Programmes:** It is worthwhile to develop a school dental health programme. For this purpose a school dental health nurse is to be trained to look after nearly 2000 children. A training programme will have to be designed. The nurse must have a minimum qualification of matriculation with training of not less than 2 years. Her work is supervised by the dental surgeon.

Payment plans: Collection of user fees only from patients who can afford to pay. School children to get free treatment.

Private sector: Private dentists are mostly located in the cities and Taluka Levels. The “out of pocket” spending may be minimised by social insurance facilities.

Maintenance of dental equipment: Many equipments are not utilised for want of repair work. It is necessary to study the cost benefits of annual maintenance agreements with the suppliers, as against having a maintenance department.

The suggested organisational pattern of Dental Health Services (Govt)

- State Level - Deputy Director in charge – Dental Health Services and Education
- District Level - District Dental Officers (Senior Dental Health Officer)
- Taluka Level - Dental Surgeons (Dental Health Officer)
- PHC
1. Dental Auxiliary Personnel (In future)
 2. School dental nurse (In future)

To start with, the primary care physician may be trained to look after the function of the above personnel

Prevention:

- Oral Health Promotion Programmes at all levels with posters, slides and cassettes etc. This may be a part of the health education programme.
- It is necessary to create awareness about use of locally available material for oral hygiene eg., neem sticks may be used for brushing. Supply of cheap brush / toothpaste / tooth powder by removing sales tax may promote brushing of teeth.
- Prevention of fluorosis is possible by supplying potable water from flowing river water, defluoridation, and supplying water from wells that do not contain high fluoride.

Research

There is a need for surveys of dental diseases in the state and Research projects may be undertaken for dental caries, oral cancer, fluorosis and periodontal disease. Research in dental health may be part of the medical and public health research body that is to be created.

Recommendations

- *Introduce oral health promotion as an integral part of health promotion at every level of health care and as part of the school health programme.*
- *All vacancies of dental health officers to be filled up by suitably qualified persons.*
- *All dental clinics should have the necessary equipment and facilities, which should be maintained in good working condition.*
- *A designated post of Deputy Director to be in charge of Dental Health Services and Dental Education, at the Directorate.*
- *Train PHC medical officers in simple dental procedures; expand the number of auxiliary dental health personnel trained and increase their utilization in the field in a phased manner. Train health workers on awareness, detection and referral of dental health services.*

5.8. OCCUPATIONAL HEALTH

Occupational health deals with measures to make all work related activities and the environment safe and free of hazards to health. It is the science and art devoted to the anticipation, recognition, evaluation and control of health hazards arising out of work and work environment.

Regional Occupational Health Centre (South)

Karnataka is fortunate to have the Regional Occupational Health Centre (South) of the Indian Council of Medical Research located in the Bangalore Medical College Campus. It is upto the State to make full use of the facilities of the Centre to carry research into the occupational health problems of the State and find appropriate solutions, so that the quality of life of the workers will be improved.

Types of occupations

The occupations vary; so also the health hazards. Majority of our people are engaged in agriculture and the hazards related to agricultural work must be anticipated and dealt with effectively. There is an increasing number of industries and factories (large, medium and small) dealing with different processes and products. They employ large numbers of people, who are exposed to the environment within the factory and its surroundings. The people living nearby, though not working in the factory, are also exposed to the environment, which is affected by the activities of the factory by way of fumes and gases and other effluents.

Agricultural labourers

Agriculture is the primary source of employment in Karnataka. Apart from the usual causes of ill health affecting all people, especially the poor, the use of chemicals (fertilizers and pesticides) produces toxic effects. **Pesticide** exposure related problems are increasing as with resistance developing, larger doses of pesticides are applied. The pesticide residues remain in food, water, soil and fodder. Adverse effects are seen not only in people involved in the manufacture, formulation and application of pesticide but also in the general population as the pesticide enters the food chain.

Aerial spraying of organophosphorous insecticides can affect the eyes and other parts of the body (systemic). Repetition of spraying should not be done in the same area within a few weeks to avoid cumulative effects.

Carbamate insecticide used in cotton cultivation can cause cardiotoxic effects with changes in electrocardiogram.

Agricultural tobacco workers, growing or curing tobacco, may develop a symptom complex known as “green tobacco sickness”. The signs and symptoms are headache, nausea, vomiting, giddiness, weakness, fatigue and fluctuations in blood pressure and heart rate.

Agriculture and accidents

Agriculture workers are prone to many accidents. Mechanisation of agricultural processes has increased the incidence of accidents. Threshers, for example, can lead to loss of fingers, hands or arms. Whenever machinery is introduced, it is necessary to train the workers in the safe working of the machines.

Table 5.18 : Use of pesticides in agriculture

Insecticides	75%
Fungicides	15%
Weedicides	6%
Others	4%
	100%

Table 5.19 : Use of pesticides on different crops in India

Crops	Percent pesticide Share
Cotton	52 – 55%
Rice	17 – 18%
Fruits and Vegetables	13 – 14%
Plantation	7 – 8%
Cereals, millets, oilseeds	6 – 7%
Sugarcane	2 – 3%
Others	1 – 3%

Pesticides are used for health programmes such as the malaria and filaria control programmes. Sometimes pesticides may be used for committing suicide. Accidental poisoning can also occur. Apart from the effects of pesticides, the use of traditional tools in agriculture can cause ergonomic problems.

Sericulture

Karnataka is the major silk producing State. Sericulture is an agriculture based cottage activity. It involves mulberry cultivation, silkworm rearing, silk reeling, silk weaving and finishing. Chemicals like formalin and bleaching powder are extensively used. Smoke from cocoon cooking basins (using firewood) can affect the workers. The workers in sericulture may develop breathing disorders, including bronchial asthma.

Poultry

Poultry farming has become a highly commercialized agri-business. India stands fifth in egg production; Karnataka has its share in it. The occupational problems arise from physical, chemical and biological hazards. Allergic alveolitis occurs in workers who are hypersensitive to feathers, feather dust and faecal material. Cough, dyspnoea and fever might be seen. If continued, decrease in lung capacity may be seen. Noxious gases, such as ammonia, carbon dioxide, carbon monoxide, methane or hydrogen sulphide, can cause adverse effects. Chemicals and antibiotics can cause dermal allergies or transfer antibiotic resistance.

Bacterial, viral and parasite pathogens can occur with faecal waste. The common bacteria are *salmonella*, *E.coli* and *Chlamydia*.

The poultry farmers and their families and employees in poultry processing plants are predominantly at risk. The general population also is at risk from the infectious agents.

Industries and factories

There is large scale increase in the number of industries and factories. Considerable improvement can be effected in the reduction of health hazards. The design of the work place should be such that there is none or only minimal hazard to the health of the worker. It should be ensured that harmful agents are eliminated. The manufacturing process itself may have to be changed or toxic agents substituted by harmless or less toxic agents.

Industrial accidents, accidents at construction sites and occupational diseases must be avoided. So also, it is necessary to ensure that women and children do not work in industries that are specially harmful to them. Child labour should be abolished progressively and children must be at school.

Among the industries in Karnataka, apart from the large industries where protective measures are usually taken, are electroplating, foundry, castings, dyeing, pharmaceuticals and others.

Electroplating industry caters to making of automobile spare parts and others in which Zinc, Nickel, Chromium, silver etc are used. These can produce nasobronchial allergy and contact dermatitis. Similar problems can be found in dye factories.

Silicosis

Quarrying, granite industry, cement industry, grinding of metals, iron and steel foundries, silica mining and tunneling can cause silicosis. The problem is attributable to the inhalation of silicon dioxide (silica). The lungs are affected. Persons having silicosis are more prone to be attacked by tuberculosis. The symptoms are dyspnea on exertion, cough and symptom complex resembling chronic bronchitis. Vital capacity of the lungs is reduced.

Asbestosis

Asbestos is used in many products. Continued inhalation of asbestos particles causes a lung disease known as **asbestosis**. There is gradual obstruction to the airways and damage to the lungs. It is banned in many countries. Asbestos contains magnesium silicate, iron, calcium, sodium and other minerals. It is silky and fibrous in nature. It is available in nature in several varieties, the common ones being white asbestos and blue asbestos. Asbestos dust can become impacted in the respiratory bronchioles and alveoli. It causes thickening of the walls of the alveoli, making them inelastic. Asbestosis leads to progressive breathlessness and decrease in capacity to work. There may be chronic bronchitis. Thickening of pleural sac is seen commonly. The major consequences are lung cancer and mesothelioma of the pleura.

Agarbathi

Agarbathi industry is a cottage industry concentrated in the city of Bangalore and present in other parts of the state. In 1999, Bangalore city had over 300 agarbathi manufacturing units, of which 134 were registered under the Factories Act. The industry involves persons of all age groups. There is need for dust control measures. The rooms must be well ventilated. Dust masks may be used while making the chemicals, which liberate the aroma. Gloves and aprons will be useful.

Tea

The processing of tea involves plucking of leaves, withering, rolling, drying/firing, sifting and packing. Heat, humidity and noise can produce health hazards. The field worker and factory worker must be protected.

Beedi rolling

Men, women and children are engaged in beedi industry. Tendu leaves, tobacco and thread are used. The problem is due to suspended particulate matter and tobacco, which produces the adverse effects due to nicotine.

Legislation

There are a large number of laws governing the health of the workers in the industries. They are not adequate nor are they implemented effectively. The main laws are:

- **The Factories Act, 1948 and amendments 1976 and 1987.**

Workers are to be protected from the harmful effects of dust and fumes. Safety and health surveys are to be carried out. The Act provides for availability of drinking water and toilets. The Act gives a number of notifiable diseases. The government can declare any manufacturing process as hazardous and order its closure. The Act gives the right to information to the workers and the people living around the factory. There is an Inspectorate of factories and boilers under the Chief Inspector.

- **The Mines Act, 1952 and amendment, 1983.**

The Act requires the constitution of a committee to advise the Government on the rules and regulations to be framed regarding the health and safety issues of the workers. Silicosis and pneumoconiosis are notifiable. There is an Inspectorate of Mines under the Mines Inspector.

- **The Plantations Labour Act, 1951**

It regulates the conditions of labour in plantations – tea, coffee, rubber and others. It provides for the availability of drinking water, medical care, education of children, crèches and housing for plantation labour. There is a Chief Inspector of Plantations.

- **The Beedi and Cigar Workers (Conditions of Employment) Act, 1966.**

It covers all the processes in the manufacture of beedies and cigars. It makes provision for the availability of drinking water, washing facilities, ventilation and cleanliness.

- **Employees State Insurance Act.**

It provides for benefits to the worker and family in case of sickness and employment injury.

- **Workmen's Compensation Act, 1923**

The law provides for compensation in case of occupational injuries and diseases.

All the Acts and Rules regarding prevention and control of pollution, Central and State, are applicable to the industries, to control pollution of water, land (e.g., dumping of waste), air (e.g., dust) and noise.

In order to implement the laws effectively it is necessary to work out the standards for industries, including standards for protective equipment. There have to be adequate number of trained staff for inspection. Workers should be involved in decision making with respect to health and safety measures.

Sexual harassment as an occupational hazard

Sexual harassment can occur anywhere but it is now being recognized as an occupational hazard. This is particularly so in the case of the health workers such as ANMs who may be called to render help (sometimes bogus) at any time of day or night. There is need to ensure protection and safety of women health personnel. The relationship between 'boss' and 'secretary' or between 'contractor' and 'worker' is also occasionally open to sexual harassment or abuse. Child workers are particularly vulnerable.

Health Care and Occupational health

People working in hospitals, nursing homes and other health care institutions are open to hospital acquired (nosocomial) infections, as are the patients admitted to these institutions. Care has to be exercised when dealing with patients with infectious diseases. HIV infection can be acquired from needle stick injuries. All persons working in these institutions must adopt universal precautions to prevent infections.

Basic approach

The basic approach in occupational health / hygiene is the identification and monitoring of exposure to harmful physical, chemical and biological agents (going beyond the permissible limits) and removal of these hazardous agents. It also involves taking necessary precautions and safety measures to avoid health hazards, including the wearing of gloves, masks and goggles. There is always need to make the work place hygienic with good ventilation, lighting and housekeeping. Moving machine parts and equipment (unless protected) can be harmful. Evaluation of exposure levels should be carried out carefully, using appropriate technology. The Inspectorate of factories has an important role to play.

Objectives

- Protect the health of employees
- Recognize, evaluate and control health hazards
- Counsel employees on health hazards and the need to take precautions to avoid the adverse effects.
- Ensure that the employers respect the advice and report findings of the Inspectors and take action on the recommendations.

Occupational health services

Occupational health services should include

- Pre-placement assessment:** A pre-employment medical check-up is a must. This would include physical examination and laboratory, radiological and other tests to assess health status. This could form the basal data; any deviation due to work / work environment can be found out.
- Periodic check-up:** This would enable the medical inspector and others to find deviations in the health status of the individual at the earliest and take appropriate steps. These check-ups should focus not only on the physical condition but also on mental health, as there can be psychosocial stresses.
- First aid and emergency services:** Necessary equipment and materials should be available at all times to give first aid and emergency care to any employee who might require them. It is also necessary to train workers in first aid.
- Measures for continuous improvement of working conditions and environment must be undertaken.
- Health Education:** It is necessary to educate workers and the public on possible adverse effects, on safe work practices and to take immediate action in cases of accidents or otherwise.

Recommendations

- *The use (abuse) of pesticides must be reduced to the minimum. The effects of pesticides must be studied. Only such insecticides as are found to be not harmful within the dosage should be allowed*

to be manufactured / imported and used. Cumulative effects should be considered. Monitor continuously the effect of the use of pesticide. If found harmful, withdraw it.

- Occupational health services exist in large industries but this must be made mandatory and expanded. Smaller industries can pool their resources and have effective centers with qualified and trained persons. The quality of service of the Employees State Insurance (ESI) Scheme should be improved. Pre-employment and periodical health check-ups of all workers should be conducted.
- Workers in the unorganized sector are the vast majority in India and include agricultural workers, quarry workers, beedi rollers, agarbathi rollers, vendors, domestic workers, among others. Their access to quality health care to be covered by social insurance schemes. Safety of equipment, work processes and work environment to be progressively improved. The responsibility of employers to be delineated.
- Implement pollution controls – environment; air, water and soil. Ensure that standards are worked out periodically and that the permissible levels are not violated. This will be through intersectoral coordination with the State Pollution Control Board.
- Suitable modifications to legislation be enacted to ensure good health of all workers, after consulting workers, experts, and professional bodies in occupational health.

5.9 CONTROL OF BLINDNESS IN KARNATAKA

Introduction:

It is estimated that about 12 million people in India are blind that is with a visual acuity of less than 6/60. The magnitude of the problem is listed below:

Table 5.20 : Magnitude of blindness in India and Karnataka

	ICMR Survey (1971)	WHO / NPCB Survey (1986)	Estimated (1993)	Karnataka (1995)
Population	586,572,852	762,893,474	876,205,384	42,939,775
Prevalence Blindness				
VA<6/60	1.38%	1.49%	1.49%	1.62%
VA<3/60	0.54%	0.70%	0.70%	0.70%
Bilaterally blind persons				
VA<6/60	8,112,303	11,399,917	13,093,137	728,079
VA<3/60	3,167,493	5,316,605	6,106,275	394,407
Cataract blind persons				
VA<6/60	6,084,227	9,131,334	10,487,603	498,101
VA<3/60	2,375,620	4,258,600	4,891,127	266,226
Cataract blind Eyes				
VA<6/60	15,450,329	22,845,750	26,239,009	1,614,535
VA<3/60	8,033,115	13,100,283	15,046,057	1,056,318

Table 5.21 : The leading causes of blindness in India are

Cause of Blindness	ICMR (1971)	WHO-NPCB (1986)
Cataract	55.5%	80.10%
Aphakia		4.69%
Refractive errors		7.35%
Trachoma	5.00%	0.39%
Other infections	15.00%	
Xerophthalmia	2.00%	
Corneal opacity		1.52%
Glaucoma	0.5%	1.70%
Small Pox	3.00%	
Injuries	1.50%	
Others	18.00%	4.25%

National Programme for Control of Blindness in Karnataka

The National Programme for Control of Blindness (NPCB) is a centrally sponsored programme managed by the Ministry of Health and Family Welfare (MOH&FW) in operation since 1976. An estimated 80% of blindness is due to the curable cause of 'senile cataract'. This curable cause provided focus for the programme in the last decade, which was to reduce the backlog due to cataract, both in terms of quantity of cataract surgery and also on quality of visual outcome. The number of cataract surgeries performed each year, both in the public and private sector is increasing from 1.2 million in 1989 to over 3 million in 2000. The overall objective is to reduce the prevalence of blindness from 14 per 1000 to 3 per 1000. The estimated prevalence is above 4.5 lakhs in Karnataka.

DANIDA has supported the NPCB since 1978 in three phases. The present third phase covers a period from 7th Nov 97 to 6th November 2002, which has since been extended to November 2003. This phase is expected to be the last phase. The emphasis is on consolidation, internalization and sustainability.

To improve the quality and coverage of eye care services a gradual shift in strategy has been suggested as follows:

1. From an out reach eye camp approach to in-reach base hospital approach
2. From providing standard 10+ glasses to individual corrected glasses.
3. From Conventional Cataract surgery to IOL surgery.

To tackle this aspect following infrastructure was developed.

Infrastructure

A. STATE OPHTHALMIC CELL (SOC)

The State Ophthalmic Cell as per the Govt. of India guidelines has been created to plan, monitor and evaluate the programme with the following staff.

- Joint Director (Ophthalmology)
- Assistant Statistical Officer

- Accountant
- Stenographer Grade – J
- Second Division Assistant
- Driver and a Group ‘D’ staff

The SOC is supported by the Centrally Sponsored Scheme (CSS) under Government of India. A national consultant, who is a retired Govt. joint director of Health is also appointed for the state from the 1st December 2000.

B. DISTRICT BLINDNESS CONTROL SOCIETIES (DBCS)

Karnataka is one of the first states to start the DBCS in the country with DANIDA support in 1990. The pilot district was in Tumkur. In the year 1999-2000, all the 27 districts had a fully functional DBCS and a DPM. The district leprosy officers who are also in charge of the district leprosy control societies replaced the contractual district programme managers of the DBCS in all the districts from the 1st September 2000. This is in accordance with the revised policy of the GOI. The DBCS provide the external support that is required for the effective functioning of the programme at district and sub district level.

C. REGIONAL INSTITUTE OF OPHTHALMOLOGY (RIO) – MINTO OPHTHALMIC HOSPITAL. (MOH)

A multi-specialty Ophthalmic Hospital, Bangalore attached to Bangalore Medical College has been upgraded as Regional Institute of Ophthalmology as per GOI norms to provide advanced eye health care to community and training to eye surgeons. The RIO is over 100 years old and is a premier postgraduate training institute of ophthalmology in the state. The institute is a base hospital for the surrounding districts of Bangalore urban and rural.

D. MEDICAL COLLEGES

Karnataka has 23 medical colleges. Five medical colleges have been upgraded to provide high quality training and clinical ophthalmic services. Qualified Super specialists are working in these institutions, namely,

- a. Government Medical College, Mysore
- b. Government Medical College, Bellary
- c. Karnataka Institute of Medical Sciences, Hubli
- d. JJM Medical College, Davangere
- e. J.N. Medical College, Belgaum

E. DISTRICT HOSPITALS

22 of the 27 district hospitals in Karnataka have been developed to provide surgical / clinical ophthalmic services with Ophthalmic surgeons and Paramedical Ophthalmic Assistants (PMOAs) as per GOI norms. Of the remaining five, Koppal and Haveri are newly formed districts and the district hospitals are to be upgraded under the NPCB. The districts hospitals of Mysore and Davangere are attached to the medical colleges respectively. Bangalore urban district has no district hospital. These District Hospitals have been provided with a separate operation theatre funded by KHSDP and are being provided with equipment for high quality, high volume service delivery. Those districts that are not provided equipment by the KHSDP are being provided for under the DANPCB.

F. GENERAL HOSPITALS

Seven general hospitals in the state which are over 100 bedded are to be upgraded to provide clinical and surgical ophthalmic services to rural communities with an Ophthalmic Surgeon and Paramedical Ophthalmic

Assistants. They are located in Jayanagar, Bangalore (Urban), Chennapatna, Bangalore (Rural) Districts, Sagar – Shimoga district, Kolar Gold Fields – Kolar district, Hospet – Bellary district, Holenarsapur – Hassan district, and Jevargi – Gulbarga district.

G DISTRICT MOBILE OPHTHALMIC UNITS (DMU)

31 District Mobile Ophthalmic units are functioning in the State to provide curative, promotive and surgical facilities to rural and tribal communities by adopting hitherto a camp approach. Each Mobile unit has an Ophthalmic Surgeon, a Health Education Officer, Staff Nurse, Paramedical Ophthalmic Assistants, Driver and a Group 'D' staff. The District Mobile Ophthalmic units are instructed to operate not only in those fixed centers that have upgraded operating theater but also assist in the district hospital.

There are four districts with an extra mobile unit located in

Gokak	–	Belgaum district.
Yadgir	–	Gulbarga district,
Hospet	–	Bellary district and
Tiptur	–	Tumkur district.

Posting of doctors other than ophthalmologists to the mobile units defeats the purpose of such units e.g. Bagalkot, & Chamarajanagar

H PRIMARY HEALTH CENTRES

416 PHC's were developed with creation of one ophthalmic assistant post to give primary eye health care facilities to the rural community. An extra 99 posts for ophthalmic assistant was created for the general and taluk level hospitals. There at present a total of 515 posts for PMOAs and 385 posts are filled of which 316 PMOAs are in the PHC's.

I EYE BANK

Three eye banks are functioning at RIO Minto Ophthalmic Hospital, Bangalore, K.R. Hospital, Mysore and District Hospital, Belgaum. There is also the Lions West Eye Hospital and Cornea grafting center in Bangalore and one eye collection centre in Hospet, Bellary. There is a need to upgrade the same so as to improve the Eye Banks standards.

MANPOWER AND TRAINING

a. Ophthalmic Surgeons:

The state has over 670 eye surgeons in all sectors combined. Though there are a few dedicated tertiary eye care hospitals; almost all districts have on average 2 eye surgeons in the Government Sector. Under the quality improvement programme for microsurgery in IOL, 64 Government Eye surgeons have undergone IOL training up to December 2000. This is inclusive of those in the Govt. Medical Colleges.

b. Para-Medical Ophthalmic Assistants (PMOAs)

Under National Programme for Control of Blindness, Paramedical Ophthalmic Assistants training has been started in four Government Medical Colleges. They are Minto Eye Hospital, Bangalore; K.R. Hospital, Mysore; KIMS, Hubli; VIMS, Bellary. In each training school 15 students are trained. The syllabus was revised and adopted by the State Govt. Para Medical Board.

The following problems have been identified in Karnataka:

- Effectiveness of NPCBs state level functioning as perceived by districts has only marginally improved.
- The NPCB focuses on the major cause of blindness which is cataract; other causes of blindness such as glaucoma, Refractive errors, Vit. A deficiency, Diabetic Retinopathy require more emphasis.
- The high turnover of state programme officers and inadequate support staff in SOC is a major concern.
- Lack of integration and ownership at state and district level have been responsible for NPCBs poor performance.
- Inadequate capacity utilisation at the medical colleges and district hospitals has resulted in poor quality of care and coverage of services.
- Trained ophthalmic manpower has been maldistributed at medical college, district hospitals and various other levels.
- The infrastructure and trained manpower have not been optimally utilised, leading to inadequate coverage and quality of service.
- Manpower training of Ophthalmic Surgeons, PMOAs and Ophthalmic Nurses has been far from satisfactory
- There have been delays in procuring equipment and setting up IOL microsurgery centres at district level.
- Networking with the NGO and voluntary sectors is far from satisfactory.
- Micro-planning and implementation have not been achieved in most of the districts.
- Output and visual outcome of cataract surgery are inadequate in most of the base hospitals and outreach surgical camps.
- There have been delays in providing GOI funds to DBCSs during 1999-2000, probably due to accounting and auditing problems.
- The Department of Health & Family Welfare and DBCS, IEC budget are not fully utilised.

Strategies

I. To improve the performance of the programme in the State

State Ophthalmic Cell must be strengthened by

- *The long term continuity of the Joint Director, at least for a period of two years.*
- *The posts of Assistant Statistical Officer and Accountant need to be filled with qualified staff.*
- *An additional post of Deputy Director should be created and filled with a dynamic, young and focused public health specialist or ophthalmologist.*

Manpower utilization:

- *Trained ophthalmic manpower should be appropriately distributed at medical colleges, district hospitals and various other levels.*
- *Accountability of the ophthalmic units, specially the ophthalmologist. The number of cataract surgeries performed against the total expenditure on the unit per year will give the cost per cataract surgery incurred by the government.*
- *All teaching institutions in the state especially those utilizing government facilities (district hospitals) to be made responsible so as to participate in the programme.*

Information Education Communication (IEC)

- The Government of Karnataka should develop an IEC strategy that strongly emphasises area-specific approaches and community participation in the dissemination of IEC.
- The IEC strategy needs to be **gender – sensitive** and also address the **marginalised** groups.
- The Government of Karnataka should issue clear guidelines for utilisation of IEC resources (financial and technical) in the districts and at the state level.
- The decentralised approach needs to be further strengthened, so that the districts are able to develop their own modified IEC strategies.
- The IEC should address the new service access options in particular by informing marginalised groups who have otherwise less access to information.
- The state must integrate intensively the IEC work with the health system. At district level, the district health education officer will liaison with DBCSs and will be in charge of the IEC activities.

Management Information System (MIS)

- There is the need for an MIS trained person to assist the district programme for the DBCS.
- The second generation of MIS with segregated data must be implemented
- The MIS from the service provider to the State Ophthalmic Cell must be uniform in the state.
- Feedback in terms of performance and accountability must be given to the concerned officials.

School Eye Screening (SES)

- The SES must be integrated with the regular check up of the school children. This is possible by including the Deputy Director of Public Instruction (DDPI) and the Reproductive and Child Health Officer in the DBCS and making them responsible for the implementation of the programme.

II. Specific Causes of Blindness

1. Cataract

An estimated 80% of blindness is due to the curable cause of 'senile cataract'. This curable cause provided focus for the programme in the last decade, which was to reduce the backlog due to cataract, both in terms of quantity of cataract surgery and also on quality of visual outcome. To improve the cataract surgical coverage in Karnataka the following measures are recommended:

- All Medical Colleges Eye departments should take up in-reach base hospital programme.
- All taluk hospitals upgraded by the KHSDP should be made base hospitals for conventional cataract surgery and be allotted a fixed area and target.
- All districts should have atleast two Govt. base hospitals where IOL surgery is available
- The Divisional Joint Director for their effective utilisation should coordinate and depute the available surgical manpower to fixed surgical centres on the operation days in the districts.
- All post-operative patients should be given individually corrected spectacles.
- All fixed surgical centres should strictly follow the guidelines laid down by the Govt. of India for conducting cataract surgical services.

2. Glaucoma

The prevalence of glaucoma in India as stated by the WHO / NPCB survey (1986) was 1.7% of the cases of blindness. It is the third cause of blindness in the country. The blindness due to glaucoma may be because of congenital glaucoma, chronic open angle glaucoma or primary angle closure glaucoma. In India data related to glaucoma in the general population is not readily available. To prevent blindness due to glaucoma the following strategies must be adopted.

Primary Level:

- *Health education on glaucoma*
- *Screening of those at risk, by the health worker*

Secondary Level:

- *Case finding or evaluating those that are referred.*

Tertiary Level:

- *Confirmation of the diagnosis and management, either medical or surgical*

This may be conducted as follows:

Screening in the community by the health worker to identify and refer persons at risk of developing glaucoma.

The persons to be screened are:

- All people over the age of 50 years.
- People with a family history of glaucoma
- People with a history of high Myopia and diabetes.

Those people referred by the health worker should be evaluated by the ophthalmologist for

- Intra ocular pressure using Schiotz tonometer.
- Cup disc ratio.
- Ophthalmoscopy

Those that are suspected of having glaucoma should have:

- Visual field tested
- Gonioscope examination for angle estimation

These persons must be referred to a tertiary level institution for confirmation of diagnosis and management, that may be surgical or medical.

3. Blindness due to corneal opacity

The WHO / NPCB survey listed blindness due to corneal opacity as the fourth cause of blindness accounting for 1.5% of the blind. The common causes for corneal opacities are Vit A deficiency, Trauma and corneal ulcers.

Thus the strategies to be adopted are:

Primary Level:

- *Health education on causes and prevention of corneal opacities.*
- *Vit. A supplementation, strengthen the ICDS programme.*
- *Measles Immunisation.*
- *Promotion of Eye Donation.*

Secondary Level:

- *Early diagnosis and management of causes of corneal opacities.*
- *Eye collection centres: The development of eye collection centres in each district hospital with the information available to the community as to the personnel available and the procedure for collection of eyes.*

Tertiary Level:

There is need to develop an eye bank of high standards and expertise for corneal grafting for the four health divisions at the following centres.

- *Regional Institute of Ophthalmology. Minto Ophthalmic Hospital, Bangalore.*
- *K.R. Hospital, Mysore Medical College, Mysore*
- *Karnataka Institute of Health Sciences, Hubli.*
- *Vijayanagar Institute of Health Sciences, Bellary.*

4. Diabetic Retinopathy

It is estimated that about 2.5 million people in the world are blind from diabetic retinopathy. In India, data related to diabetic retinopathy in the general population is not readily available. It is however estimated that 2% of the general population are diabetics and 16% of them will develop diabetic retinopathy.

Thus the strategies to be adopted are:

Primary Level:

- *Health education on diabetes mellitus and its control.*
- *Early detection of diabetes mellitus and its management.*

Secondary Level:

- *Early diagnosis and management of diabetic retinopathy.*
- *Train general physicians on early detection and risk factors for diabetic retinopathy.*
- *The availability of the equipment necessary for the early diagnosis of diabetic retinopathy in each district hospital with the information available to the community.*

Tertiary level:

- *There is need to develop the expertise of vitreo retinal units for the four health divisions at the following centres.*
 - *Regional Institute of Ophthalmology. Minto Ophthalmic Hospital, Bangalore.*
 - *K.R. Hospital, Mysore Medical College, Mysore.*
 - *Karnataka Institute of Health Sciences, Hubli.*
 - *Vijaynagar Institute of Health Sciences, Bellary.*
- *Rehabilitation of the blind (visually impaired).*

Recommendations

- *Improve effectiveness and outcomes of the programme by strengthening the State Ophthalmic Cell filling up vacancies with qualified dynamic staff, and long term continuity of Joint Director.*
- *Ensure accountability of the ophthalmologist and ophthalmic units regarding number and quality of cataract surgery. The epidemiological surveillance system to include ophthalmic conditions.*
- *Improve access to information regarding availability of services, especially for the disadvantaged sections. Area specific health promotion regarding eye care, with community participation.*
- *Integrate school eye screening with health check-up of school age children.*
- *All Medical College Eye Departments should take up in-reach base hospital programmes.*
- *All taluk hospitals (upgraded by KHSDP) should be made base hospitals for conventional cataract surgery and be allotted a fixed geographical area.*
- *All districts should have at least two government base hospitals where intraocular lens (IOL) surgery is available. All postoperative patients should be given individually corrected spectacles.*
- *The District Medical Officer should coordinate and depute the available surgical manpower to fixed surgical centres on the operation days in the districts.*
- *Screening the community by the health worker to identify and refer persons at risk of developing glaucoma, to ophthalmologists for evaluation and management.*
- *Prevention, early diagnosis and intervention in persons liable for corneal opacities causing blindness. Develop eye collection centres, eyebanks and expertise in corneal grafting for the four divisions in government medical college hospitals.*
- *Establish speciality clinics: glaucoma, vitreo-retinal and corneal grafting centre.*
- *Improve networking with the voluntary and private sectors.*

5.10 TOBACCO CONTROL

Tobacco consumption in smoked or chewed form has been proved harmful to health over the past 3-4 decades. Extensive epidemiological and medical studies have provided evidence that over 25 serious diseases are associated with tobacco use. These chronic disabling diseases reduce life span by as much as fifteen years in long term users and result in great suffering and economic loss. The strong addictive nature of nicotine is now more widely known. This was however known to the industry in the 1950s and kept hidden. Much evidence has been generated as a result of the cases against leading tobacco multinationals in the United States Courts of Justice. Chemical manipulation of cigarettes, with ammonia and other substances, is resorted to for increased nicotine absorption. Simultaneously, advertising and marketing efforts focus on young consumers from 10 years of age onwards, because given the addictive nature, once a consumer there is a strong probability of becoming a consumer for life. In India and Karnataka, tobacco use has been increasing over the years even among younger children and women, especially chewed tobacco. Tobacco consumption is commonplace among all economic strata, in both urban and rural areas. Irrespective of age and sex, men, women and children use tobacco in both urban and rural areas. It is the production of tobacco, availability of tobacco and the role model of adults in the community, which perpetuate and reinforce this habit pattern.

WHO and its member country governments including India have been signatories to 18 resolutions over the past 20 years, endorsing the need for initiating tobacco control measures.

Every eight seconds a person dies of a tobacco related disease and almost as quickly another victim is recruited. With current smoking patterns, about 500 million people alive today will eventually be killed by tobacco use, more than half of these are now children and teenagers. By enabling efforts to identify and implement effective tobacco control policies particularly in children, different organisations would be fulfilling their missions and helping to reduce the suffering and costs of smoking.

A six-year prospective study by the Indian Council of Medical Research has shown that in India, the health care costs of tobacco related illnesses by government medical institutions far outweighed all the revenue accruing from taxation, excise, export earnings, etc. This is an underestimate as costs borne by the person / family in the private sector are not included. The study included major health consequences requiring hospitalization. If outpatient and over the counter treatment were included, the costs would go up even further.

One million Indians die every year from tobacco related disease, this is more than the number of deaths due to motor accidents, AIDS, alcohol and drug abuse put together say the Indian Medical Association (IMA) and the Indian Academy of Pediatrics (IAP) (reported in The Hindu edition date 31-10-1998 under the caption "smoking kills 10 lakhs").

Epidemiological and experimental evidence has identified smoking as the primary cause of lung cancer, chronic obstructive pulmonary disease (COPD) and a major risk for heart disease; smoking has been also associated with other cancers, cerebro-vascular and peripheral vascular disease and peptic ulcer disease. Cigarette smoke consists of a complete mixture of thousands of toxic chemical compounds produced by the incomplete combustion of the tobacco leaf. Smoke constituents strongly implicated in causing disease are nicotine tar in the particulate phase and carbon monoxide in the gas phase. Smokers have a 70% higher mortality than non-smokers. The risk of death increases with the amount and duration of smoking and is higher in smokers who inhale. Lung cancer has been the leading cause of cancer death in men. Since 1950 epidemiological studies have shown an association between smoking and cancer of bladder, pancreas, stomach and uterine cervix. The coronary disease death rate in smokers is 70% higher than in non-smokers.

Tobacco cultivation in Karnataka

In Karnataka, as elsewhere, the special variety of Virginia tobacco has attracted the fancies of farmers. Government of Karnataka is also inclined to encourage its production, as it increases the revenue to the exchequer and has kept target of production at 30 million kgs with awards to farmers, ("Awards presented to four state tobacco farmers". Deccan Herald, October 2000).

Tobacco cultivation in Karnataka during the year 1989-90 and 1990-91 was 50.5 and 46.1 thousand hectares, of these 18.1 & 19.2 thousands hectares were under Virginia tobacco.

Tobacco consumption

There is a wide consumption of tobacco in the various forms like cigarettes, cigars, beedi, hukka, Gutka, Panparag. Tobacco consumption pattern in India is as follows: 50% beedi, 30% gutka or chewed tobacco and 20% cigarettes.

The number and percentage of tobacco users in Karnataka is given by the International Journal of Tobacco Control – 1995, Vol. 1, No. 3 Page 202. It gives the type of habit (use of tobacco in different forms) in the rural and urban areas, as also the users below 15 years of age and those above 15 years.

Passive Smoking

Non-smokers exposed to passive smoke are vulnerable to irritating coughs, sore throats, dizziness and headache. Exposure to passive smoke worsens pre existing health problems like allergy, asthma, and bronchitis as well as heart and lung disease. In children passive smoke causes higher incidence of cough, wheezing, asthma and respiratory infection. Babies born to mothers who smoke have lower birth – weight, face greater risk of respiratory disease and die of sudden infant death syndrome.

Non-smokers involuntarily inhale the smoke of nearby smokers, a phenomenon known as passive smoking. Wives, children, workers and friends of smokers are highly risk prone groups. This Indian hospital admission rates are 28% higher among the children of smokers. Maternal smoking during pregnancy has also been linked with higher rates of spontaneous abortion, fetal and maternal death.

When smoking occurs in enclosed areas with poor ventilation, such as in buses and conference rooms, high levels of smoke exposures can occur. In recent studies on non-smoking women, those married to smokers had higher lung cancer than those married to smokers.

Damages of passive smoking are real, broader than once believed and parallel to those of direct smoking.

Environmental tobacco smoke (ETS) also contributes to respiratory morbidity of children.

An estimated 65% of men use tobacco and in some parts a large proportion of women chew tobacco. About 33% of all cancer is caused by tobacco. About 50% of cancers among men and 25% among women are tobacco related.

Prevention of tobacco use through tobacco control measures

Prevention of tobacco use and abuse is urgently required for promotion of health and economy in Karnataka and other parts of India.

To do so the following strategies are of prime importance.

1. Awareness education programmes in educational institutions and with community groups, particularly with children and the youth.
2. Health education and tax increases.
3. Legal measures regarding direct and indirect advertising, sponsorship, sales restrictions, ban on smoking and spitting in public places, curbing of smuggling and unregistered beedi production.
4. Decreased production of tobacco.
5. Support to the international public health treaty, the “Framework Convention for Tobacco Control” (FCTC) initiated by WHO, based on the mandate of member countries, including India.

Although both national and international agencies have been engaged to restrict use of tobacco for promotion of health, still it is not enough to control this habit. Hence there should be public arousal and cooperation at the individual level, family level and community at large, in addition to the execution of strategic efforts.

Often paradoxical evidence is observed in the media, which should also be screened and modified for example “*smoking is injurious to health*” is written in microscopic size at the unnoticeable corner of a huge colourful attractive advertisement with alluring statement like “*live like a King* “ or “*relax with a puff of smoke*” etc. Therefore moderation of such advertisements with warning labels, which would catch the perception of individuals properly, would be of help.

Recommendations

I. Ban on tobacco consumption

- Complete ban on tobacco consumption in public places such as:
 - (a) Hospitals and all other health care facilities
 - (b) Educational institutions (schools, colleges, university).
 - (c) Transport facilities:
 - i. Air travel (domestic)
 - ii. Buses
 - iii. Trains: Separation of smoking and non-smoking compartments.
 - (d) Waiting areas: Segregation of smoking areas from non-smoking areas
 - i. Airports.
 - ii. Hotel lobbies.
 - (e) Theaters / Cinemas
 - (f) Restaurants
 - (g) Sports
 - (h) Museums, libraries and closed areas of tourist interest: total ban on consumption at work site and to provide segregated area for smokers at recreational / eating facilities.

II. Ban on tobacco sale

- Ban on sale to minors (below 18 years of age)
- Ban on sale in the immediate vicinity of educational institutions

III. Ban tobacco advertisement / promotion

- All hoardings / poster advertisements to be banned, including in / on all transport facilities.
- Radio and television ban on tobacco advertising should be continued.
- Advertisements in cinema halls / videocassettes / audio.
- Ban on advertisement in the print media (desirable).
- Health warning should accompany at least 20% area of advertisements on the topside. The health warning must be rotated periodically and must have a graphical display e.g. skull and bones as a sign of danger; a picture of a cancerous lesion or a warning that impotence is also a side effect.
- Point of sale advertising should be prohibited. Warning symbols and health warning should be prominently displayed at the point of sale.
- Ban on all forms of sports, arts and entertainment sponsorships or linkage with sports goods / accessories should be effected. This ban should apply to all tobacco products and to other products with the same brand name. Indirect sponsorship through setting up of trusts, etc., should be banned.
- All promotional activities for any tobacco product such as free distribution, mailings, discount offer etc., should be banned (Mandatory)

IV. Statutory warning on packaging / nicotine and tar content notification:

- Notification of nicotine and tar content on all packages of the cigarettes and beedies should be made compulsory.
- Statutory warnings should be extended to all forms of tobacco
- Size of the statutory warning should be as large (in letter size) as the brand name
- Statutory warnings should be periodically rotated.
- Statutory warnings should be placed in the local regional language (Desirable).
- Graphic danger symbols such as skull and bones must also be printed on the packaging in addition to the statutory warning.
- Nicotine and tar content of cigarettes should be progressively reduced, in a specified time frame. This may need to be introduced for beedies as well.
- A national nicotine-testing laboratory should be set up by the central government, to be used as a licensing and monitoring center. The requisite funds for this center may be derived from the tobacco industry through special taxation measures (Desirable).

V. Taxation

- Taxes on all tobacco products should be increased (Desirable)
- A specified percentage of the tax revenue from tobacco should be set aside for health education on tobacco related diseases (Desirable)

VI. Incentives

- Farmers who change over, from tobacco, to alternate crops should be provided incentives for three years (Desirable).
- Government must establish tobacco cessation clinics and programmes in government health facilities (Desirable).
- Promote diversification of tobacco industry into other industries such as information technology (Desirable).

VII. Environmental legislation

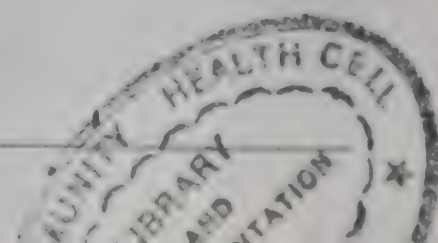
- Environmental legislations to provide for a targeted compulsory compensatory reforestation programme by tobacco producers and industry to make up to a tobacco curing related deforestation. A specific tax may be levied for this purpose with penalties for noncompliance.

VIII. Joining international effort

- Support the Framework Convention for Tobacco Control (FCTC) initiated by WHO, by discussion at government level with legal experts.

IX. Miscellaneous

- Improve working condition of beedi workers. Industry must provide for medical care of the workers.
- Have alternate employment for beedi workers and labourers now working in tobacco growing, curing, etc.,
- Investment of public sector funds in the tobacco industry should be stopped.



5.11 ALCOHOL AND HEALTH

Ethyl alcohol, the intoxicant & depressant present in alcoholic beverages, is a product of fermentation & distillation. Methyl alcohol is a contaminant found in many "illegal & spuriously" produced beverages and causes morbidity including blindness and death.

Alcohol use and abuse and the attendant problems have risen many-fold in Karnataka in the past decades. Alcohol abuse must be seen as a major public health problem and a socio-economic issue. Karnataka has to take responsible action towards the prevention and control of this problem.

Constitutional provision

Article 47 of the constitution of India says: "The State shall regard the raising of the level of nutrition and the standard of living of its people as among its primary duties and in particular the State shall endeavour to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health".

The Governments of different states had attempted to bring about prohibition, total or partial, but gave up those efforts due to a variety of reasons, loss of revenue, cost of policing, corruption of enforcement machinery, illicit, distillation, 'hooch' related deaths and above all, lack of political will.

Revenue

The alcohol industry contributes a major part of the revenue of the States. In 1997 it was estimated to be about 17,000 crores of Rupees, in the form of taxes and levies. The liquor consumption in the country was growing at a steady 15 percent annually.

Types of alcohol

- **Toddy**, obtained by fermenting the sap from various species of palms, especially palmyra and coconut. The production of toddy has been restricted in the State.
- **Country liquor**, produced by distillation. Arrack is the common name; it is widely available, and distributed usually in small sachets.
- **"Indian made foreign liquor"**: Different varieties like whisky, brandy, rum and gin are available.
- **Illicitly distilled liquor**:
 - house made for personal use
 - house made for sale in the neighbouring areas
 - made for sale in a wide area, including cities and towns.

Production, sales and consumption

We have no accurate figures regarding the production, sales or consumption of alcohol for drinking. Consumption of alcoholic beverages is increasing. It is spreading to younger people. High School students are becoming regular users of alcohol. Pub culture is spreading in the State especially in the cities.

Health Problems

Alcohol consumption produces a large number of problems, affecting adversely almost every organ in the body. Gastritis is an early symptom which brings the patient to the doctor. Alcohol can cause fatty liver, alcoholic

hepatitis and cirrhosis. Alcohol users frequently present with malnutrition and deficiencies of B group vitamins can also occur. Alcohol impairs blood sugar regulation. Control of blood sugar by antidiabetic medication is impaired. Drinking can affect blood pressure control. There is increased risk for cerebral haemorrhage and stroke and for cardiac failure. Alcohol can cause polyneuropathy. Alcohol withdrawal produces unpleasant physical and psychological symptoms. Serious complications include delirium tremens and hallucinations. Depression and anxiety are more common among drinkers.

Many medications can interact with alcohol. Alcohol can reduce the metabolism of many drugs. Alcohol can magnify the effects of drugs like sedatives and narcotics. Many drugs such as analgesics, antihistaminics, and antibiotics, antidiabetics and hypnotics have significant interactions with alcohol.

Social Problems

Alcohol causes family disruption and marital discord. Its use leads to family violence, wife-beating and physical assaults. There is neglect of family responsibilities. Alcoholism in the parent affects the educational performance of children and leads to deviant behaviour. The most demeaning effect is the loss of self-esteem among family members

Financial Problems

Alcoholism is more common amongst poorer sections of the society: Schedule casts, landless labourers, daily wage earners etc. Money been spent for alcohol leads to deprivation of the basic needs of the rest of the family members. 15 to 40% of family income is wasted on alcohol. If we compare the regular users of alcohol and the non-drinkers, the non-drinkers spent 8% more on food, 30% more on clothing, 168% more on health care and 300% more on children education.

Industrial Workers

Absentees are much more common among alcohol users. There is also lowered productivity, maladjustment at work place and increased accidents. Non-drinkers, on an average, took home about 50% more money than the habitual drinkers.

Crime and Violence

There is increase in crime and violence as a result of use of alcohol. Increasing all kinds of violence, sexual abuse, rape and murder is seen with increase use of alcohol.

Pattern of drinking

Alcohol consumption is an accepted social and traditional norm in many countries. Among developing countries especially, this was predominantly by males, very rare among women and children, and even then low in terms of numbers and quantity consumed.

Today there is substantial evidence to prove increasing levels of consumption, and growing numbers of users among adults as well as children. The norms are also changing- there is societal acceptance to drinking- no excuse needed for it like religious rituals or festivals. Peer pressure, social pressures, association of drinking with a "Macho" image which is perpetrated and promoted by cinema and other media and advertising are some factors responsible to for this.

"Social" drinking is considered to be synonymous with "moderate drinking". While this is so in the context of a traditional "wet" or alcohol using culture, this is not necessarily so in the context of a "dry" culture as in India where there are no traditional norms pertaining to alcohol use.

Moderate drinking refers to patterns of drinking where people drink no more than 2 drinks a day in case of males and one in case of females and those over 65 years. Never more than 4 drinks at any given sitting (3 for women). The assumption is that the person has at least 2-3 dry days in a week. (One unit drink refers to half a bottle of beer, one 30ml.peg of spirits or one-third sachet of arrack)

However in a "dry" culture the predominant pattern of use or "social drinking" is drinking to intoxication. This leads to harm from drinking in inappropriate situations (e.g. drinking and driving) or heavy drinking likely to cause physical, psychological and social problems.

The large number of such users account for a significantly greater proportion of medical problems, social costs and economic losses to the state compared to that from the much smaller population of those addicted or dependent on alcohol.

In the context of Karnataka, while about one third of the adult male population uses alcohol; one out of two people who drink develop significant problems related to drinking.

Alcoholism

Alcohol dependence is a recurrent and relapsing illness which affects one in four drinkers. It is characterized by increasing intake of alcohol to get the desired effect, a compulsion to drink, unpleasant physical and mental symptoms on withdrawing from the substance, loss of control over intake, a preoccupation with seeking and taking of the substance, consequent impairment in physical, social and psychological functioning and continuing to drink despite knowledge of such harm.

Alcoholism is a disease which needs intense medical and psycho-social interventions for the alcoholic as well as his family. Treatment consists of detoxification (medically supervised to minimize withdrawal symptoms) abstinence and training to prevent relapse.

Certain people may be especially susceptible to developing alcohol dependence and genetic (hereditary) factors might account for around 60% of such susceptibility. However, like any other complex medical disorder, environmental factors play a major modifying role in determining the expression of this illness.

As a Public Health issue however, the medical, social and economic costs generated by the significantly larger population of people with heavy or hazardous use (not just the alcoholics) are immeasurably greater. Also, early stage alcohol problems are more amenable to treatment. Early detection and intervention of alcohol related problems offer the best outcome.

The lax implementation of regulations and laws is leading to increased production and wide availability of alcohol. This stems from a perceived loss of income to the exchequer from production and sale of alcohol, and compounded by pressure from liquor lobbies. Unfortunately this does not take into account the health spending and economic loss due to alcohol- related ill health.

A ten –year study by NIMHANS between 1988 to 1999 reveals some shocking facts.

- Karnataka's instilled capacity for beverage alcohol is one of the highest in the country. The production has gone up by 150%, and per capita consumption by 114%, i.e. average consumption by an average drinker has gone up from 9 bottles of whiskey per year to 20 bottles.
- People are beginning to drink at an earlier age (average age- dropped from 25 to 23years), drink larger quantities, and develop health problems earlier (mean age dropped from 35 to 29years).

- More than 50% of all drinkers have problem drinking patterns and associated morbidity.
- Early alcohol related health problems is under recognised by primary health care physicians. Although a large proportion of patients were reporting potential alcohol related symptoms only 1.4% to 2.3% were asked for history of alcohol intake and none advised to stop alcohol use.
- Heavy drinkers far outweigh chronic alcoholics in numbers and also account for substantially more medical, social and economic problems.
- The problem is larger and more serious in rural than urban Karnataka.
- The Karnataka Government's alcohol related health expenditure and loss due to alcohol related industrial losses was Rs.975 crores, more than the earning from excise on beverage alcohol.

How to tackle the problem?

Prohibition has almost been given up. Where it has been tried, it has not been a success. Hence the present thinking is to reduce the problem. This can be done in three ways:

1. **Supply reduction:** Alcohol related problems are caused by the availability of alcohol. Various methods are used to reduce the supply:
 - (i) **Increase in taxes:** It is considered that there is an optimum level of taxation of alcoholic beverages. Beyond a certain level, increasing taxation may lead to more spurious liquor being made available are there may be an increase in smuggling
One suggestion has been to proportionately increase the taxes and duties on hard liquor compared to beer and wine with lower content of alcohol. But there is possibility that youngsters who start with beer or wine may 'graduate' to spirits with larger alcohol concentration.
 - (ii) Increase the minimum age for legal purchase of alcohol. Even when there is such a law, it is often violated.
 - (iii) Reduce the number of alcohol outlets. This is effective.
 - (iv) Restrict the sale hours. This is also effective.
 - (v) Restrict the sale of alcoholic drinks on certain days. This can be tried.
2. **Demand reduction:** There are different strategies
 - (i) **School based prevention strategy:** Imparting knowledge about the adverse effects of alcohol consumption, particularly the hazards to health, may create awareness, which can lead to action. Often students take to drinking because of peer pressure. This can be reduced
 - (ii) **Community based preventive strategy:** Community groups can mount campaigns against drinking and particularly against illicit distilling and distribution. The use of mass media, and particularly folk media, can give dividends. The voluntary organisations and religious institutions can play a important role in reducing the demand
 - (iii) **Family focused prevention strategy:** If family is strengthened, problem drinking can be reduced.
 - (iv) **Reduction of advertisements:** Demands are created by advertisements. If advertisements, direct and indirect, are stopped, there will be substantial reduction in demand.
3. **Harm reduction:** The harm caused by drinking alcohol can be reduced to an extent by following certain principles.
 - (i) Do not drive after drinking. Accidents caused by drinking after driving can be reduced if breath analyzers are used and punishment given when alcohol concentration in the breath is above a certain limit.

- (ii) Do not drink on an empty stomach. When food is taken before drinking there is slower absorption. It is then assimilated and detoxicated more effectively in the liver.
- (iii) Drink only beverages with less concentration of alcohol and limit the number of drinks at any time.

Alcohol use and abuse is associated with violence, especially against women and children. It is important to actively look for history of violence in drinkers and conversely, history of alcohol abuse in family members of women and children who present with unexplained and repeated physical injuries. The abuser may require anti-psychotic drugs in addition to other therapeutic interventions.

Alcohol abuse has a definite association with other risk behaviour e.g. unsafe sex, and therefore with STDs & HIV/AIDS.

Recommendations

- *Training of all Medical Officers and especially at the Primary Health Care level on screening the patient for alcohol abuse problem with a simple questionnaire, early detection and interventions for alcohol-related health problems including discontinuation of drinking.*
- *The training should include sensitization regarding association of alcohol use with violence in the family, and association with STDs & HIV/AIDS.*
- *Referral centres for treatment of alcoholism should be identified or set up at district levels. The treatment programme should include detoxification, treatment of withdrawal symptoms, psychological therapy and long-term relapse-prevention programmes to ensure abstinence*
- *Referral to local self-help groups like Alcoholics Anonymous should be encouraged as part of the relapse prevention programmes for treatment of alcoholism.*
- *The model of "camp-approach" for treatment of alcoholics which is being successfully implemented by TTK Hospital, Chennai, in some centres in Tamil Nadu could be tried in Karnataka. The essential element for the success of this model is involvement of the local community in the relapse-prevention programme. This should be ensured.*
- *The Government should treat the alcohol problem as a major public health problem and socio-economic issue.*
- *The departments of Excise (Finance), Health, Education, Social Welfare and Police department should work together to implement and enforce the existing regulations and measures applying to production, sales, retail, taxation and advertising of alcohol.*
- *A differential Tax structure with a higher taxation on liquors than on beer or wine will help in discouraging the drinking of beverages with higher alcohol content.*
- *A general awareness about "drinking and driving" should be undertaken by the Transport department. This should specify the type and amount of drink over which the person should not drive, explained in lay terms and not as percentage of alcohol. The laws against drinking and driving should be strictly implemented and exemplary punishment must be awarded to offenders.*
- *Measures to prevent production and trade of illicit liquor should be enforced.*
- *Health education programmes for children and adolescents should include substance abuse as well as Life Skills Education.*
- *Community level interventions by Government and by NGOs should include community awareness, Health Education, social support for battered women and children, vocational rehabilitation for reformed alcoholics, etc.*
- *Advertising agency and media should be encouraged to self-regulate and avoid even covert messages.*

5.12. HEALTH ASPECTS OF DISASTER MANAGEMENT

Introduction

The Indian subcontinent is prone to disasters caused by natural phenomena. The sub continental tectonic plate is continuing to shift in a northern direction, giving rise to seismic activities and phenomena consequently there have been earthquakes, mild to severe in different parts of the country. The recent major earthquakes affecting the Latur district in Maharashtra and Bhuj- Ahmedabad belt in Gujarat are still fresh in our memories. Due to the long coastline and due to the geographic features of the land mass and ocean, the coastal regions of India are prone for cyclones and sudden flooding by rise in sea tides. The recent disastrous Orissa cyclone is also still fresh in our memory.

The immediate effect of a disaster is loss of human life and injuries. The health impact is compounded by uprooting of human habitations and disruption of social organisation. In the aftermath of such disasters large populations are housed in overcrowded camps, which make them prone to outbreaks of diseases. Every developed country has a contingency plan of disaster management in general and for emergency health care in particular. The Government of India has recently formed a national disaster management council with members having cabinet rank. Karnataka State must develop a multi hazard disaster management plan for all districts. The Department of Health must take the leadership and develop a plan for preparedness to face the health aspects of disasters within the state.

Can disaster strike Karnataka?

Yes, natural disasters could occur in areas of our state. Hazard maps have been documented by agencies in terms of risks for cyclone and wind hazards, earthquake and floods. Based on Hazard maps, Karnataka has:

- Coastal areas of Moderate Damage Risk Zones for Cyclone and Wind Hazards,
- Coastal areas of Low Damage Risk Zones for Earthquake Hazards.

In addition there are the likelihood of disasters on account of:

- Krishna and Cauvery flowing through both the north and south of the state, with the likelihood of floods,
- Long-term slow disasters like Drought,
- Human made disasters such as riots and conflicts,
- Fire accidents, major industrial accidents,
- Road, rail or plane accidents.

In 1998, Karnataka had sought central assistance to the tune of 13,521.3 million rupees as a part of the National Calamity Relief. In 1998-99, floods and rains accounted for 10339 villages affected, with 8.549 million people at risk, 310 lives lost, 9,562 animals lost and 1,28,402 houses damaged. Disaster preparedness and reduction means appropriate development planning.

Role of medical teams in disasters:

One of the primary impact areas of disasters is health, both physical and psychosocial. Medical teams would be required during the early phase of resuscitation following rescue, in terms of care for injuries and other life-threatening medical problems.

In the next phase when displaced populations develop health problems, typically seen due to crowding, poor sanitation and hygiene, inadequate nutrition and safe drinking water, medical teams have major roles in disease

prevention, outbreak control and treatment of diseases. In addition psychosocial counseling and assistance play very important role in successful rehabilitation.

In post disaster progress towards normalcy, children and women, particularly among the poor, remain vulnerable to deprivation and exploitation. The health teams have a major role to prevent or mitigate such problems.

Resources available in Karnataka

- **NGOs:** Numerous major NGOs like OXFAM, Action Aid and Community Health Cell already exist here in Bangalore and have been involved in "Bangalore Responses" to major disasters in different parts of the country. Oxfam has an Emergency Fellow who has an Oxford published India Disaster Report.
- **Armed Forces:** The services have a contingency plan for disasters and have always been the most organized and efficient unit where we have had the opportunity to work with in the past.
- **St. John's Disaster Relief and Training Unit:** The only one of its kind among Medical colleges in India, with a seven disaster experience and motivated volunteers they could be a boon to coordinating, training and organizing any rapid disaster response team. The medical college hospital has an Emergency Medicine Department. They have an excellent ability to improve upon an already existing Disaster Relief and Training Unit. This institution has lead the Bangalore response in seven disasters since 1971 Refugee camps.
- **NIMHANS:** The experts in Post Disaster Stress and Psychosocial consequences are available with dedicated volunteers.
- **HAMs:** There are a large number of people who are linked with HAM radio broadcasting and receiving in the state.

The broad framework of a district level multi hazard disaster management plan

A group of competent persons must be identified for preparing a Karnataka state multi hazard disaster plan for all districts. The Department of Health must give leadership. The group may obtain and study the The India Disaster Report (Oxford University Press), the Maharashtra State Disaster Management Plan, the UNDP led Orissa cyclone rehabilitation activities and other relevant experiences and reports.

The group may consider the following items in drafting a plan document.

- **Institutions and protocols.** Identify all relevant institutions including district hospitals, teaching hospitals and private institutions to be oriented to face mass casualties. There should be in place clearly defined protocols in case of a disaster to allow minimum response time and rapid activation of the system. Members of these centers should receive basic training to be resourceful in a mass casualties situation.
- **Manpower:** Volunteers identified, classified according to skills, trained and oriented, updated and with contact numbers/addresses.
- **Finances:** Potential sources and available funds must be identified.
- **Supplies:** Sources, storage areas, WHO essential drug list modified, bulk instead of samples, labeled, packaged and classified.
- **Communication:** Facilities such as HAMs and Cellular phones are essential for any disaster.
- **Transportation:** Identification of rapid transportation of personal, equipment and supplies to sites of need and mobility in the field of action.

- **Need assessment teams:** Personnel identified as specialists able to assess needs of populations displaced in the field.
- **Team support and needs:** Teams need survival shelter, food and water for themselves to avoid becoming a burden in the populations they serve.
- **Coordination:** Identification of Coordinators and regular updates between potential teams. Identification of nodal persons in each district.
- **Network:** Liaison between Government agencies, NGOs, Armed Forces and Medical Institutions with Relief Team capabilities is a must to effectively coordinate activities.
- **Training:** Training of all concerned in disaster preparedness and relief is essential to sensitise volunteers and organizers to the needs of people in distress. Also survival techniques for self-preservation of team members.
- **Advocacy:** Appropriate advocacy would go a long way in raising issues and support for not only relief but also preventive measures.

Recommendation

The Government of Karnataka will commission a competent group of expert administrators and policy makers including those in the field of human health, to prepare a multi hazard plan for all districts in the state of Karnataka. This Plan should be completed before the end of the year 2001.

6. MENTAL HEALTH AND NEUROSCIENCES

6.1 MENTAL HEALTH

The World Health Organisation has defined health as a state of complete physical, mental and social well-being. The components of Primary Health Care (Alma-Ata declaration) has promotion of mental health as one of the eight specified areas. While the physical well-being has been receiving attention, mental health has been largely neglected. Many individuals are unable to enjoy life because of mental illness or personality disorders. The quality of life suffers. Such persons can benefit from early psychotherapeutic and social interventions. Recent developments in therapy have enabled many persons to be integrated into the society as a result of judicious use of drugs and other modes of treatment; these persons would otherwise have been incarcerated in the 'asylums'. Early detection and intervention are needed.

Mental disorders

Mental disorder is defined as a clinically significant behaviour or psychological syndrome or pattern that occurs in a person and that is associated with present distress or disability or with a significantly increased risk of suffering death, pain, disability or an important loss of freedom.

Karnataka Situation

Karnataka has been in the forefront of mental health care in India and developing countries. Bangalore Mental Hospital was one of the first mental hospitals for the mentally ill persons without an outside boundary wall. The first psychosurgery for treatment of chronic mental illness in India was carried out in Bangalore Mental Hospital in the early 1940s. In Independent India, the National level institution for the training of psychiatrists, clinical psychologists and psychiatric nurses, namely All India Institute of Mental Health was set up in Bangalore in 1954. In the 1970s and 1980s Karnataka pioneered the integration of mental health with general health services and provided the district model for mental health care in the whole country. Currently the Bellary model of organising mental health care with general health care has been accepted for national level mental health planning. The state has the opportunity to develop further programmes at the state level to promote mental health, prevent mental disorders and provide care for the persons with mentally disorders.

Scope and importance of mental health

The scope and importance of mental health ranges from care of the ill to the promotion of mental health. One of the earliest Indian psychiatrists and from Bangalore, to clearly outline this was Govindaswamy (1948) as follows:

"The field of mental health in India has THREE objectives. One of these has to do with mentally ill persons. For them the objective is the restoration of health. A second has to do with these people who are mentally healthy but who may

become ill if they are not protected from conditions that are conducive to mental illness which however are not the same for every individual. The third objective has to do with the promotion of mental health with normal persons, quite apart from any question of disease or infirmity. This is positive mental health. It consists in the protection and development of all levels of human society of secure, affectionate and satisfying human relationships and in the reduction of hostile tensions in the community.”

The above three levels of activities continue to be relevant at the beginning of the new century.

Mental disorders are more common than most people believe them to be. A number of epidemiological studies have been conducted in various parts of Karnataka (the first general population epidemiological study in India, was planned in 1956 in Bangalore) and India to find out the prevalence of mental disorders. These studies have shown that mental and behavioural disorders are present among about 10 to 15% of the general adult population. About 1% of the general population has serious forms of mental disorders requiring urgent care.

Burden of mental disorders

Epidemiological figures show the enormous burden of illness resulting from psychiatric and behavioural disorders, both in the community and in primary care. Even so, the burden is grossly under represented by conventional public health statistics, which until now have tended to focus on mortality rather than morbidity or disability.

With the development of the new health indicator, the Disability Adjusted Life Year (DALY), an instrument is now available for calibrating the public health significance of mental disorders, providing a tool for comparative assessment in a general health context. The DALY is a composite outcome measure designed to assess the amount of ill health, including premature death and disability, due to specific diseases and injuries. It adds, for each disorder, life-years lost due to premature death, and life-years lost due to living in a disabled state. Using the DALY as a measure, the WHO-World Bank study in 1993 revealed the magnitude of the long underestimated impact of mental health problems.

Types of mental disorders:

Persons with mental disorders experience psychiatric problems, psychological stress and social dysfunctioning. Some of them have genetic origin, they have changes in the nervous system: neurochemical or structural. Others reflect breakdowns of vulnerable people in response to social and environmental pressures. These different types, biological and social, require different strategies for management.

Mental disorders with biological origin like schizophrenia, manic-depressive disorder and organic brain disorders account for 1-2% of the population at any given time. There is need for early recognition of the problem, sensitisation of the family and the community to their needs, provision of psychiatric help and provision of a caring environment.

Classification:

There are different ways of classifying mental disorders. The International Classification of Diseases (ICD 10) is the one now followed. This includes a simplified classification for use in primary care. It has broad categories such as dementia, delirium, eating disorders, acute psychotic disorder, chronic psychotic disorder, depression and bipolar disorder. The main categories of mental disorders included in ICD 10 are based on a mixture of symptoms and causation. Some of the disorders of individual and public health importance are described below.

1. Depressive disorders

Depression is the most common “treatable” mental disorder. It is characterised by sadness of mood, loss of interest in activities and decreased energy. Other symptoms include loss of confidence and self esteem.

inappropriate guilt, thoughts of death and suicide, diminished concentration and disturbances in sleep and appetite. A variety of somatic symptoms may also be present. Though depressive feelings are common especially after experiencing setbacks in life, depressive disorder is diagnosed only when the symptoms reach a threshold and last at least two weeks. Depression can vary in severity from mild to very severe and is most often episodic but it can be recurrent or chronic. Depression is commoner in women in the ratio of 2:1.

Treatment of depressive disorders: The goals of therapy are early recognition and diagnosis, treatment with drugs and psychological methods to decrease the symptoms, and continuation of therapy to prevent relapses.

2. Schizophrenia

Schizophrenia is a severe disorder that typically begins in late adolescence or early adulthood. It is characterised by fundamental distortions in thinking and perception and by inappropriate emotions. The disturbance involves the most basic functions that give the normal person a feeling of individuality, uniqueness and self-direction. The behaviour may be seriously disturbed during some phases of the disorder, leading to adverse social consequences. Delusions, strong belief in ideas that are false and without any basis in reality are another feature of this disorder. Schizophrenia follows a variable course, with complete symptomatic and social recovery in a proportion of cases. However, schizophrenia can follow a chronic or recurrent course with residual symptoms and incomplete social recovery. Individuals with chronic schizophrenia constituted a large proportion of all inmates of mental institutions in the past as well as at present, wherever these institutions still exist. A substantial number of individuals with schizophrenia attempt suicide sometime during the course of their illness.

Treatment of schizophrenia: The goals of care are to identify the illness as early as possible, treat the symptoms, provide skills to the family to cope with the situation, maintain the improvement over a period of time, prevent relapses and reintegrate the ill person in the community to lead a normal life. The treatment of schizophrenia has three main components. First, there are medications to relieve symptoms and prevent relapse. Second, education and psychosocial interventions help patients and families cope with the illness and its complications, and help prevent relapses. Third, rehabilitation helps patients reintegrate into the community and regain educational or occupational functioning.

3. Substance Use Disorders

Use of psychotropic substances causes a number of health and social problems. Mental and behavioural disorders due to psychoactive substance use include disorders due to use of alcohol, opioids (e.g. opium, heroin) cannabinoids (e.g. marijuana), sedatives and hypnotics, cocaine, other stimulants, hallucinogens, tobacco and volatile solvents.

Though the use of substances (and associated disorders) varies from region to region, tobacco and alcohol are the substances that are used most widely and also cause the most public health consequences. Alcohol also causes a high economic cost on society. Communities spend more money on taking care of alcohol problems than they earn by alcohol taxes.

4. Disorders of childhood and adolescence

Contrary to the popular belief, mental and behavioural disorders are common during childhood and adolescence. However, attention given to this area of mental health is grossly inadequate. During the last one year a general population study of children in the rural and urban areas around Bangalore has been completed.

5. Suicide

Suicide is the result of an act deliberately initiated and performed by a person in the full knowledge or expectation of its fatal outcome. Suicide is now a major public health problem. Though only about half of all individuals who complete suicide have mental disorders, behavioural and psychological factors are important for all. On an average about one in ten of all suicide attempts result in death. The most common mental disorder leading to suicide is depression, though the rates are high for schizophrenia also. In addition, suicide is often related to substance abuse – either in the person who commits it or within the family. A proportion of suicides by women are believed to be caused by alcohol dependence among men, though clear evidence on the extent of this is not available. Against a national rate of 11/100 000 of population, Bangalore city suicide rates are twice that rate.

There are many approaches to **Suicide Prevention**. These are:

- a. acceptance of normalcy of suicidal feelings by the general population;
- b. life skills programmes for children and adolescents;
- c. enrichment of family life;
- d. community institutions for crisis support;
- e. crisis help centres;
- f. care for people with chronic illnesses;
- g. early treatment of mental disorders;
- h. help for suicide attempters to prevent repeat attempts;
- i. support to families with suicide experience and
- j. social policies relating to alcohol, family life.

MENTAL HEALTH CARE IN KARNATAKA

State Level Mental Health Resources

The mental care resources in the State consist of NIMHANS, Bangalore, Institute of Mental Health in Dharwad, departments of psychiatry in the medical colleges, private psychiatric hospitals/nursing homes in major cities like Bangalore, Mysore, Hubli, Davanagere and services provided by voluntary organisations. Karnataka is fortunate to have a number of organisations like the Medico Pastoral Association, Richmond Fellowship, Family Fellowship, Cadabams which provide short and long term care and rehabilitation services. In addition agencies like Viswas, Helping Hand are involved in suicide prevention. Another important initiative is the families coming together to develop support to each other like the Association for the Mentally Disabled (AMEND). There are a number of Institutions for the care of the mentally retarded individuals. There are a few facilities for the care of the persons with drug and alcohol dependence. Many professionals have used the newspapers, magazines, radio, TV and movies to educate the general public.

National Institute of Mental Health and Neurosciences, Bangalore

Karnataka is fortunate to have NIMHANS, though the State lost the Mental Hospital, Bangalore when it became the All-India Institute of Mental Health and later it became NIMHANS. It is now a deemed University and reputed National Institute in the forefront of Service, Teaching and Research. Karnataka must make maximum use of this Institute, particularly in the areas of organizing the services and training of the health professionals. The Institute can be a major source for conducting surveys and research into mental health problems in the State and the country.

Dharwad Mental Hospital

This hospital needs considerable improvement on the lines suggested in "Minimum standards of Care in Mental Hospitals", published by NIMHANS. The Hospital is utilized for the training of medical students of Karnataka Institute of Medical Sciences. While it should cater for such training, it should remain as a State Institute with better facilities. There is no other large institute under State control.

Medical Colleges

The Medical Colleges and affiliated teaching hospitals should have full-fledged psychiatric units for teaching, service and research.

It is necessary to integrate mental health with primary health care. Hence the health professionals and workers at the peripheral health units (e.g. the primary health centre) should be capable of detecting and managing common mental disorders.

Innovative approaches

Karnataka has pioneered the development of community mental health programmes. This approach started with the Sakalawara programme (1975-1980) followed by the Solur programme (1981-1984) which demonstrated the feasibility of integrating mental health with primary health care. This was followed by the Bellary District Mental Health Programme.

The results demonstrated the feasibility to integrate mental health with general health services by choosing priorities and developing proper training programs for the health personnel. This requires

- the commitment of health authorities to include mental health as part of Primary Health Care;
- provision of adequate drugs;
- availability of support and supervision from the PHC doctors; and
- further crystallisation of knowledge regarding the treatment schedules to be used in the community without daily and continuous supervision of specialized staff.

The National Mental Health Programme (Government of India, 1982) was formulated with the following objectives:

- To ensure availability and accessibility of minimum mental health care for all in the foreseeable future, particularly to the most vulnerable and underprivileged of the population,
- To encourage application of mental health knowledge in general health care and in social development, and
- To promote community participation in mental health services development and to stimulate effort towards self-help in the community.

During the last few years, the District Mental Health Programme (DMHP) has been launched at the national level. The DMHP was launched in 1996-1997 in four districts, one each in Andhra Pradesh, Assam, Rajasthan, and Tamil Nadu, with a grant assistance of 22.5 lakhs each. A budgetary allocation of Rs.28.00 crores has been made during the Ninth Five Year Plan period for the National Mental Health programme.

The current programme envisages:

"A community based approach to the problem, which includes

- *training of the mental health team at the identified nodal institutes within the State;*
- *increase awareness in the care necessity about mental health problems;*

- *provide services for early detection and treatment of mental illness in the community itself with both OPD and indoor treatment and follow-up of discharged cases, and*
- *provide valuable data and experience at the level of community in the State and Centre for future planning, improvement in service and research. The training of trainers at the State level is being provided regularly by the National Institute Of Mental Health and Neurosciences, Bangalore under the NMHP (GOI,2000)".*

The DMHP was extended to seven districts in 1997-1998, five districts in 1998 and six districts in 1999-2000. Currently the programme is under implementation in 22 districts in 20 states.

Action Plan

The State has the responsibility and opportunity to create environments that will promote mental health, implement measures to prevent mental disorders and organise services so that the ill individuals recognised early in the illness, receive appropriate care and integrated into the community.

Towards these goals the following actions are needed.

a. Promotion of Mental Health:

Mental health promotion implies the creation of individual, social and environmental conditions that enable optimal psychological and psycho-physiological development. Such initiatives involve individuals in the process of achieving positive mental health and enhancing their quality of life. The evidence on the health impact of mental health promotion interventions shows that a significant preventive answer could be given to the growing mental health problems.

There are two priorities that can be initiated in this area. First of these is to understand the strengths of the socio-cultural /religious aspects of the community and strengthen those beliefs and practices that are positive for mental health (e.g.: child rearing practices, support in crisis, family life). The second is the life skills programs. The life skills program aims to provide the school age children with skills related to their understanding of the self and handling their developmental crises, interpersonal relationships and coping with stress. The widespread use of the school level life skills programs could address the needs in the area of mental health promotion. NIMHANS and voluntary organizations in Karnataka have developed pilot programs in this area. These programs should become part of the school system all over the state.

b. Prevention of mental disorders:

Mental disorders are caused or precipitated by a number of preventable causes. The most important steps for immediate intervention are adequate antenatal, natal and postnatal care, immunisation, early intervention for low birth weight babies, treatment of epilepsy and iodination of salt and prevention of foetal alcohol syndrome.

c. Head Injury

Crash Helmets can save lives and prevent severe brain damage. Wearing of crash helmets when riding two wheelers is mandatory in many countries. It was so in our State also but now it has been removed.

The incidence of head injury was in the range of 120-160 per 100,000 populations with a mortality of 14-20 per 100,000 populations. Most of them are due to traffic accidents (62% in Bangalore, 1995). Many factors contribute to traffic accidents: careless driving, bad condition of the roads, heavy and disorganised traffic. Those who survive the traffic accidents may suffer from brain damage causing paralysis, loss of mental faculties or become a mere 'vegetable'. A crash helmet can give a good deal of protection. It could decrease two wheeler head injuries by about 30-50%. The highest number of head injuries occurs in the age groups of 20-29 years

(27%) and 30-39 years (19%), the highly productive age groups. This is a substantial number. Action can and should be taken to prevent the tragedy of death and disability to the extent we can by the use of crash helmets.

Barriers to mental health care programmes

There are many barriers to mental health care, the promotion of mental health and prevention of mental disorders. These include the low priority given to mental health in general health policy, the negative attitudes of community toward mental disorders and limited human and financial resources. In addition, mental health faces competition from other priorities such as infectious disease, malnutrition, and infant mortality.

Five initiatives could be employed to tackle these barriers:

- *Organizing services* in an accessible and affordable way;
- *Supporting families* caring for the mentally ill;
- *Educating people* to remove stigma and discrimination;
- *Using community resources* through nongovernmental organizations;
- *Formulating mental health policies* and financing systems;

Organizing services

There are **four** ways of organizing services in the State, even with limited resources, so that those who need them can make full use of them.

The **first** of these is to upgrade and humanise the Dharwad mental hospital, reducing the stigma associated with the mental treatment by converting it into a centre of active treatment and rehabilitation, and lowering barriers to admission and discharge. This requires improvement in the buildings and living facilities, enhancing the treatment facilities and increasing the professional staff, as has been done in NIMHANS, Bangalore.

The **second** approach is to integrate mental health care with primary health care, which is the best setting for the care of most mentally ill people.

Successful integration requires policy decisions to include mental health in primary care, adequate staffing, supplies, and training of personnel. It also needs the support and supervision of mental health professionals as part of a monitoring system. Primary health care personnel need to be given additional skills of mental health care through brief training programmes, which should be boosted and reviewed periodically. Essential neuro psychiatric drugs (chlorpromazine, amitriptyline, fluphenazine decanoate, phenobarbitone, trihexyphenidyl) must be provided to all health care facilities on a continuous basis. Including mental disorders in health reporting systems will enable the monitoring of programmes. Integration with primary health care does not make mental health professionals redundant. They should regard supporting and supervising primary care personnel as part of their work.

The Bellary model of mental health care should be extended to all the districts. This requires that each district has a mental health team both at the level of the district hospital and at the district health office.

The teams should consist of one psychiatrist, a clinical psychologist, a psychiatric nurse and a psychiatric social worker. The District Hospital unit should have 10 inpatient beds. Facilities must be available for all forms of treatment.

The **third** approach is to enhance the mental health skills of all doctors. All doctors need to know about the psychological problems and psychiatric disorders of the patients and families they encounter in the practice of their speciality. This is particularly so for general practitioners, as they will encounter large numbers of patients with the less severe forms of psychiatric disorders and psychological problems.

Developing human resources to support mental health programmes is urgently needed and can be achieved through enhancing the training of psychiatry at the undergraduate and postgraduate levels. Undergraduate courses in behavioural sciences for all medical students would enable them to develop an understanding of the relationships between mind, brain and body, and to recognize patients' psychological problems and psychiatric disorders.

The medical colleges should be strengthened by creating full complement of staff in the departments of psychiatry. The duration of training in psychiatry should be two months during the clinical period in the MBBS course.

The **fourth** approach is to develop a wide variety of community based rehabilitation facilities like day care centres, halfway homes, hostels and long stay facilities. This can be jointly developed with the involvement and support to voluntary organisations.

Supporting families

Families are the primary care providers in the State. Having a mentally ill person in the family puts a great strain on the members of the family. The caregiver may have to forego his or her occupation and social life. The members of the family may need training to cope with the situation. Family therapy is an approach being used now. Families need support from the state and society in a number of ways, including financial support. They also need an understanding of the illness in question, and to know how to encourage medication compliance, recognize early signs of relapse, ensure swift resolution of crisis and reduce social and personal disability. They can be supported by visiting community nurses and other support staff, and encouraged to form networks of self-help groups. State should facilitate these initiatives by

- (i) providing financial support such groups of families,
- (ii) offering public places in the community for their meetings and organisation of day care activities,
- (iii) developing visiting nurses to support families (at least one nurse for 100 families); and
- (iv) involving them in the planning of the mental health programmes.

Employment

People with mental disabilities face numerous barriers in obtaining equal employment opportunities. Finding work or returning to it after treatment for mental illness is often difficult, largely due to stigma and misunderstanding of the recovery process.

Multisectoral support is needed for the rehabilitation of the mentally ill persons. The most important other sectors directly related to mental health are education, social welfare, employment, justice and the media. An urgent need of the recovered patients is employment. The reservation of 3% available for the disabled should be implemented and include the mentally ill persons.

Educating the public

Stigma is a significant barrier to people seeking mental treatment or wanting to feel included in their communities.

The effects of stigma include discrimination, access to housing, employment and health care, restricted social activity and unwillingness to seek medical help.

While there is no obvious panacea for stigma, there are three specific interventions that can be taken up in all communities and countries; firstly, to disseminate accurate information about mental health, human behaviour, and the real nature of mental disorders; secondly, education in schools with the same objectives; and thirdly present mental health fairly in the media.

Public education using the mass media and traditional methods of communication is important to change the community attitudes and beliefs. Myths relating to chronicity of mental disorders, non-treatability, association of violence with mental disorders and other myths should be corrected. The mental health education should form part of all public health education programmes. The existing leaders in mental health education should be brought together to develop a state level long-term mental health education plan.

The Zilla Panchayat and the local level administration should be charged with the responsibility of mental health initiatives. The available channels of administration at all level from village to the state level should be utilised to educate the public and mobilise the local resources.

Nongovernmental Organisations

Nongovernmental organisations are a valuable community resource for mental health. They are often more sensitive to local realities than are centrally driven programmes, and are usually strongly committed to innovation and change. In the State they have already shown their value in the areas of suicide prevention, rehabilitation and community education.

The State should support these initiatives by

- bringing together the experiences of the voluntary organisations and disseminating the information for wider use;
- developing funding support for specific initiatives by the voluntary organisations.

Mental Retardation

Mental retardation is a condition of arrested or incomplete development of mind characterised by impairment of skills and overall intelligence in areas like cognition, language, motor and social abilities.

Mental Retardation is estimated to occur in 0.5 – 1.0 percent of all children. The degree of mental retardation varies and used to be classified as mild (IQ 50-70), moderate (IQ 35-49) severe (IQ 20-34) and profound (IQ less than 20). Classification on the basis of IQ alone is outmoded. Mental retardation means a condition of arrested or incomplete development of the mind, which is characterized by subnormal intelligence. The prevalence of 'severe' mental retardation was found to be 3 - 4/1000 in a survey of 3 villages in Bangalore District (1981). In another study in two villages in Bangalore district (1983), the prevalence rate in a sample of 1498 children aged 3-4 years was found to be 27.4/1000. 65.8 percent were mildly mentally retarded. The male: female ratio was 2:1.

Neurologically disabled children often have multiple deficits – intellectual retardation, spasticity, tremors, difficulty in focusing eyes, articulation problems and voice disorders. Such children need special educational services. The problems of being slow in hearing, maladaptive behaviour, inadequate social interaction and associated problems would require special and expert handling by trained teachers. For the mentally retarded, the focus has to be in personal care and development of social and vocational skills.

Rehabilitation

The objectives of rehabilitation include improving social skills, being socially adjusted and accepted in their families and in the society and becoming economically productive. Chronic mental illness can wreck individual lives, destroy families (unable to cope with the situation) and create tensions within the community. Rehabilitation avoids these from happening. We also need to change our attitude to people with mental illness or retardation. It has been said: *It is the society that needs to be rehabilitated.*

Recommendations

- *Train the medical officers and others at the Primary Health Centres to recognize mental health problems early, manage them effectively or refer them wherever necessary.*
- *Have District Mental Health Programmes in all districts on the model of Bellary District Programme.*
- *Ensure availability of essential drugs for the management of mental disorders.*
- *Have counseling centres with qualified and trained personnel.*
- *All district hospitals to have mental health units with qualified psychiatrists and other trained staff and facilities for outpatient and inpatient care of the mentally ill persons.*
- *All medical colleges to have qualified psychiatrists and facilities for teaching medical students and for outpatient and inpatient care of mentally ill persons.*
- *Upgrade the Dharwad Mental Hospital, converting it into a centre of active treatment in a humane way.*
- *Encourage community based rehabilitation of persons with mental disorders, who have recovered from acute illness.*
- *Encourage community based rehabilitation of persons with mental retardation, integrating them into the society.*

6.2 NEUROLOGICAL DISORDERS

Among the cluster of non-communicable disorders, prevention and control of neurological disorders are increasingly being recognised as major health challenges. In Bangalore Urban-Rural Neuro-epidemiological study (BURN) of 1,02,557 population 3206 individuals had some neurological disorders, providing a crude prevalence rate of 3126 per 1 lakh population. The neurological disorders prevalence rate is twice as frequent in rural areas. The commonest neurological disorders are headache, epilepsy, febrile convulsions, cerebrovascular disorders and mental retardation in the order of frequency (Table - 6.1) (Report of ICMR Research Project. A neuro epidemiological Survey in urban and rural areas: A prevalence Study 1995).

Table 6.1 : Proportional distribution of neurological disorders in urban and rural Bangalore.

Sl. No.	PLACE	URBAN		RURAL		TOTAL	
	DISEASE	(N)	%	(N)	%	(N)	%
1	Epilepsy	295	26.2	609	29.3	905	26.4
2	Febrile Convulsion	102	9.0	238	11.5	340	9.9
3	Syncope	12	1.1	12	0.6	24	0.7
4	Headache	508	45.0	640	30.8	1,148	33.4
5	Cerebrovascular Disorders	71	6.3	84	4.0	155	4.5
6	Mental Retardation	54	4.8	91	4.4	145	4.2
7	Dementia	6	0.5	7	0.3	13	0.4
8	Parkinsonism	9	0.8	25	1.2	34	1.0
9	Tremors	28	2.5	193	9.3	221	6.4
10	Involuntary Movements	3	0.3	6	0.3	9	0.3
11	Cerebellar Disorders	7	0.6	12	0.6	19	0.6
12	Demyelinating Disorders	0	0.0	0	0.0	0	0.0
13	Speech Disorders	6	0.5	4	0.2	10	0.3
14	Cranial Nerve Disorders	1	0.1	5	0.2	6	0.2
15	Facial Nerve Disorders	18	1.6	49	2.4	67	2.0
16	Spinal Cord Disorders	5	0.4	14	0.7	19	0.6
17	Anterior Horn Cell Disorders	27	2.4	86	4.1	113	3.3
18	Peripheral Nerve Disorders	26	2.3	39	1.9	65	1.9
19	Disorders of Neuromuscular Junction	0	0.0	5	0.2	5	0.1
20	Disorders of Muscle	50	0.4	6	0.3	11	0.3
21	Posttraumatic Disorders	50	0.4	15	0.7	20	0.6
22	Postencephalitic / Meningitic Sequelae	11	1.0	26	1.3	37	1.1
23	Intra Cranial Lesions	8	0.7	9	0.4	17	0.5
24	Other Neurological Disorders	13	1.2	38	1.8	51	1.5
	TOTAL	1,221	100.0	2,213	100.0	3,434	100.0

("NEUROEPIDEMIOLOGICAL SURVEY IN URBAN AND RURAL AREAS: A PREVALENCE STUDY")

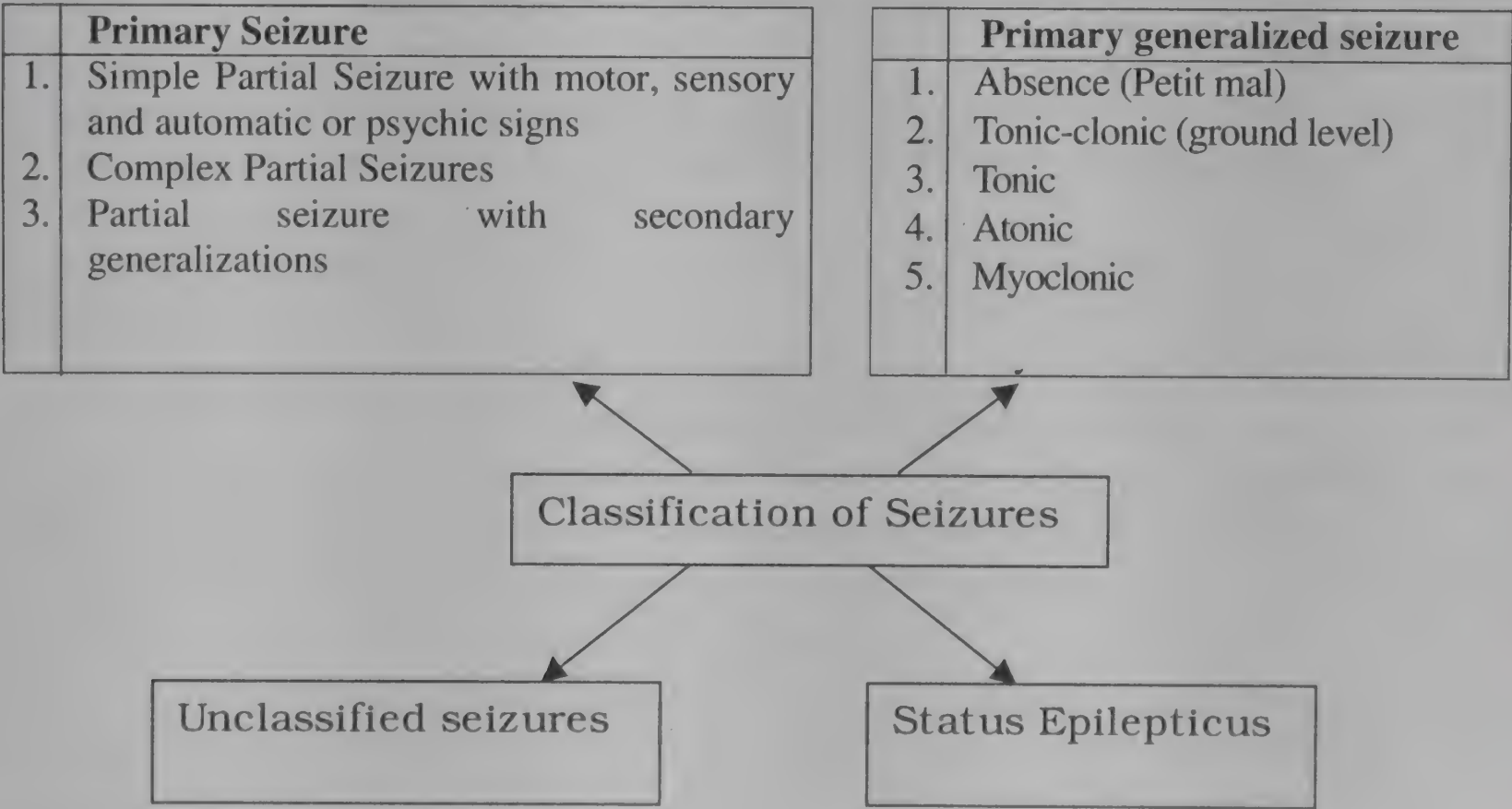
6.2.1. EPILEPSY

Epilepsy is a common neurological problem. Nearly 50 million people suffer from it world over and one fifth of them live in India alone. The prevalence was 12 per 1000 in rural areas compared with 6 per thousand in urban area, with an average of 8.8 / 1000 across both the population. In absolute terms, there are 16-20,000 persons in a district seeking care of epilepsy (BURN-study). Hence epilepsy is a significant public-health problem, in terms of burden of disease nature of illness, and its impact on individuals and families. It also poses a serious problem in terms of stigma attached with the illness, resulting in limited employment opportunity, education, marriage and quality of life.

Diagnosis

It is the history from the patient and / or the eyewitness that is very crucial and the vast majority is diagnosed by careful history. The diagnosis is supported by electro-encephalographic details though it has its limitations. The universally accepted and useful classification is shown in Fig1. Understanding the cause of epilepsy is the key issue for preventive programmes. The commonest type is idiopathic (50%). Causes include, birth trauma, neuro-infection, brain injury, alcohol, tumors, and metabolic conditions.

Figure - 1



Management – Problems:

A major area of concern is delay and failure of regular treatment. In the recent BURN study it was noticed that nearly 25% and 10% of urban and rural subjects respectively had not received treatment. An examination of utilization of service revealed that general practitioners were the major care providers in rural areas. Hence a decentralized management by a trained primary care physician with trained para-medical worker is the key to the success of epilepsy control programme.

It has been well acknowledged that epilepsy can be managed effectively with minimum drugs at community level. Several studies from NIMHANS satellite clinics and community mental health clinics indicate that the improvement rates vary from 60-80% depending on the compliance of the patient.

The treatment can be given with well established, cheap and effective drugs like phenobarbitone and phenytoin; though there are other well established drugs like carbamazepine and valproate which are costly. Ensuring a "seizure free" life improves the quality of life, which requires, continuous supply of drugs, and compliance of the patient.

Status epilepticus is an emergency in an epileptic. Intravenous diazepam is the drug to be given immediately and if not controlled the patient has to be referred.

Epilepsy is known to affect number of social (employment, education, marriage, day to day living) areas. The stigmas attached, exert significant psychological and behavioural consequences on the patient. It was noticed in one study that 39% had difficulty in progress of studies, 9% had work related problems, and 39% had personality adjustment problems. Nearly 15% of individuals had concealed their illness from employers. 22% of urban and 32% of rural believed in "supernatural" causes for the illness.

Recommendations

- **Epilepsy Education:** *It is a key area that needs immediate attention. These programmes should aim at relieving stigma, and improving the compliance of the patient in taking drugs. It must also highlight DO's and DONT'S and focus on positive outlook on epilepsy. Involve voluntary and private sectors. Awareness should be created on Hot Water Epilepsy particularly in Chamarajanagar, Mysore and Mandya Districts.*
- *The primary care physicians (both PHC doctor and private practitioner) and auxiliary staff have to be trained by a short-term course, regarding diagnosis, treatment, epilepsy education, record keeping and monitoring.*
- *Establish and strengthen epilepsy services at district hospitals through out-patients clinics with adequate supply of drugs. The district medical officers, physicians and paediatricians, may be trained by a short course as it is done at NIMHANS under epilepsy control programme. There must be a continuous supply of anti-epileptic drugs.*
- *Have a District Epilepsy Control Programme for planning, implementing, supervising and evaluating, epilepsy services. The programme officer may be incharge of all non-communicable diseases.*
- **Epilepsy and Law:** *The existing laws need finer modifications with regard to employment and driving.*
- *The primary prevention is to be achieved by improved disease control programmes, better mother and child health care services and measures to prevent accidents.*

6.2.2 STROKE

The W.H.O. defines stroke (cerebro-vascular disease) as "rapidly developing clinical signs of focal / global disturbance of cerebral function with symptoms lasting 24 hours or longer or leading to death with no apparent cause other than vascular origin". In epidemiological studies, the diagnosis of stroke is chiefly based on clinical observation (e.g. hemiplegia) though in clinical practice confirmation of diagnosis is by CT Scan. It may not be feasible in India as CT scan is available only in major cities.

Causes: The major causes of strokes are:

- (1) **Ischaemic variety** resulting in cerebral infarction / ischaemia, due to thrombosis following atherosclerosis and embolism following rheumatic and ischaemic heart diseases.

(2) **Haemorrhagic variety** where bleeding occurs into central nervous system due to ruptured aneurysm in the young or due to hypertension in the old. The risk factors involved in cardiovascular disease is almost the same as that of atherosclerosis and hypertension, like smoking, diabetes, sedentary habits, and hyperlipidaemia

Prevalence:

Stroke is a common neurological disorder and ranks fifth in the list of neurological disorders (ICMR Research project 1995).

The available data from community surveys from different regions of India (both urban and rural) for hemiplegia presumed to be due to stroke indicate a crude prevalence rate of about 200 per 100,000. A house to house survey conducted at Gowribidanoor taluk by NIMHANS, suggested a crude prevalence rate of stroke of 52 per 100,000 population.

The clinical diagnosis is accurate in 70-80% cases in trained hands without the help of CT Scan. Only a few cases might have to be referred to secondary / tertiary centers. It is also necessary to have some guidelines for reference (See Appendix). In general, any case which is unconscious,, suspected sub-arachnoid haemorrhage or subdural haematoma has to be referred urgently. In case of TIA, atrial fibrillation, syncopal attacks, the case has to be referral for evaluation and not as an emergency. The management strategy is outlined in appendix.

The prevalence rate of stroke above 40 years will be several times (3 to 15 times) more than that of below 40 years of age. The anticipated costs of rehabilitation of stroke victims will pose enormous socio-economic burden on our meagre healthcare resources. Hence prevention of stroke should be our main strategy.

The goal of treatment is to avoid development of cerebral infraction, and if present already to prevent its progression or recurrence.

- Phase I** – measures to save life and speeding recovery by maintenance of vital signs, ventilation, reduction of high blood pressure and cerebral edema.
- Phase II** – Rehabilitation and gainful employment
- Phase III** – Prevention of recurrence by management of risk factors.

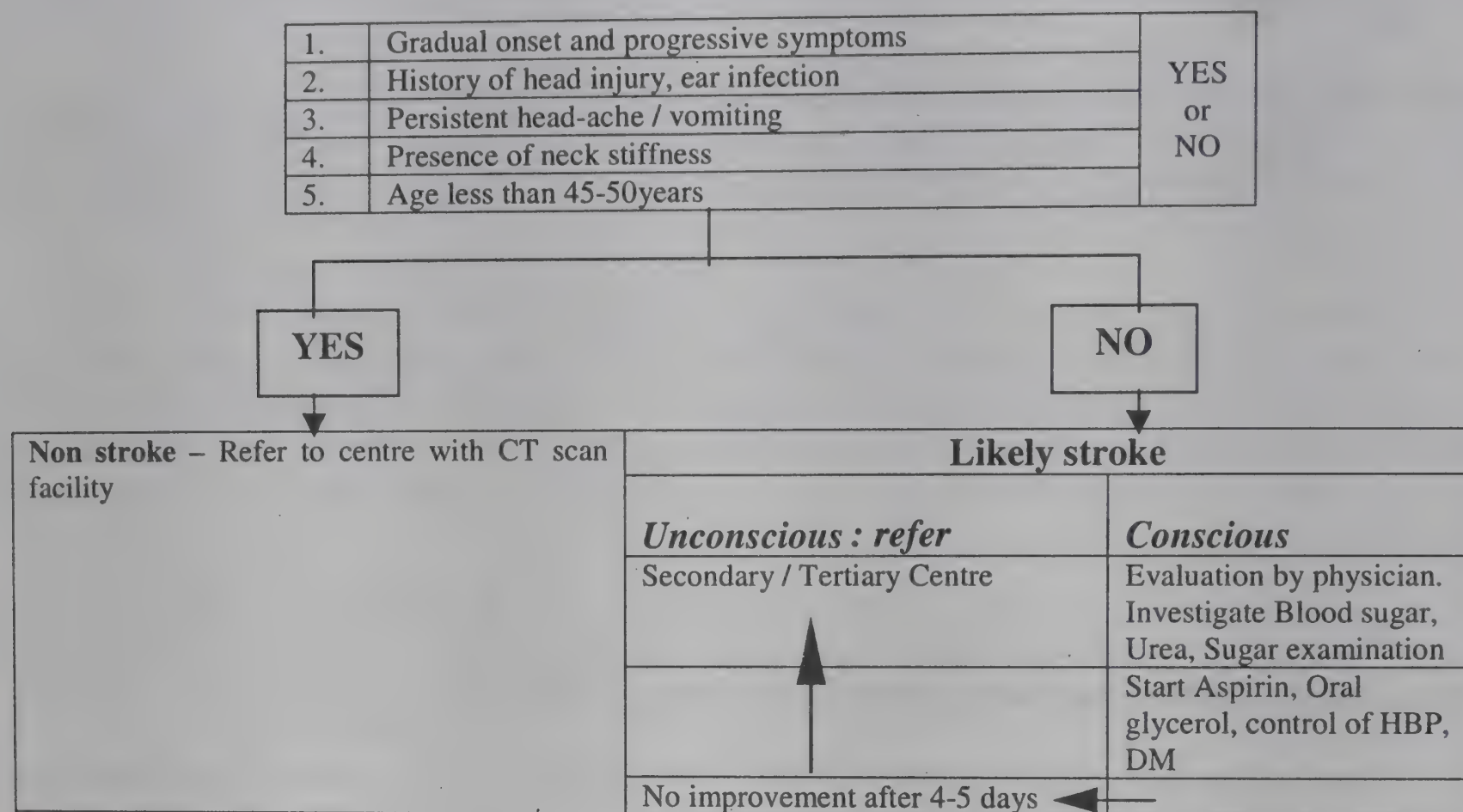
Recommendations

- *Control of hypertension, discouraging smoking, reducing intake of saturated fats, and control of obesity are important measures to be instituted at all levels of health care.*
- *Antiplatelet drugs like aspirin 100-325mg are prescribed, to prevent further attacks. It may be used as primary prevention in a person who has a strong family history and risk factors.*
- *Nearly 80% of stroke may be managed at PHC level and certain specific cases to be referred to secondary / tertiary level as an emergency (See Appendix)*
- *Training programmes for the management of all causes of neurological disorders to be instituted at NIMHANS for primary care physicians, both private and public. The training should be practical and should include physiotherapy.*
- *As the principal goal is to prevent the occurrence of stroke, a survey of prevalence of "risk factors" may be undertaken along with that of Diabetes, hypertension and coronary artery disease.*

Appendix

Stroke – Management at the peripherals

Is it stroke or non-stroke?



6.2.3. NEUROLOGY AND NEUROSURGERY SERVICES IN GOVERNMENT MEDICAL COLLEGES

Introduction

The prevalence rate of Neurological and Neurosurgical disorders in the community (excluding head injuries) is approximately 40 per thousand population. Based on this prevalence rate, in the State of Karnataka the number of people with neurological and neurosurgical disorders is estimated to be 2 million. The rapid developments in science and technology have made it possible to accurately diagnose a variety of neurological disorders and to offer improved methods of treatment and alleviate the suffering of patients.

Neurology and Neurosurgery services in the southern States–Andhra Pradesh, Kerala and Tamil Nadu.

In Andhra Pradesh, Kerala and Tamil Nadu, all the Government medical colleges have units of Neurology and neurosurgery (unit being defined as three faculty members, inpatient ward and out patient clinics, diagnostic and treatment facilities). Therefore the low-income group people are provided these speciality services. Each of these states in addition to the facilities in the medical colleges also has major regional apex centres: Nizam Institute of Medical Sciences in Andhra Pradesh; Sree Chitra Tirunal Institute of Medical Sciences in Kerala; Madras Institute of Neurology in Tamil Nadu. There was a parallel development of the regional apex centres as well as neurology and neurosurgery services in the government medical colleges.

Neurology and Neurosurgery services in Karnataka

- The All India Institute of Mental Health, and the Mental Hospital were merged together and National Institute of Mental Health and NeuroSciences was established in 1974 funded by Government of India and Government of Karnataka. NIMHANS is considered as one of the premier institutions in Asia. The Institute is a Deemed University.
- **Private Medical Colleges / Hospitals**
Neurology and Neurosurgery are well developed in private medical colleges at Manipal, Mangalore, Belgaum, Davanagere, St.John's Medical College, Bangalore, Ramaiah Medical College and Hospital, Bangalore etc. There are super speciality private hospitals, which provide quality services. These services are utilized mainly by affluent people; people below the poverty level and middle income group find it difficult to afford the services.
- **Government Medical Colleges**
Except in the Bangalore Medical College where skeletal services of neurology and neurosurgery are available, in none of the other government medical colleges in Mysore, Bellary and Hubli, these services are existing. Even in Bangalore Medical College, there are no special diagnostic facilities, advanced neurosurgical facilities or the requisite number of specialists.

Problems of the public in utilizing neurology and neurosurgery services:

Since facilities are not available in the Government Medical Colleges, a large number of patients have to travel long distances to NIMHANS for treatment with considerable inconvenience. This often leads to delay in diagnosis and institution of prompt treatment. The resources at NIMHANS in terms of manpower, diagnostic facilities, drugs and inpatient beds are stretched beyond the limits and it is not possible to cope up with large number of patients. In spite of best efforts by NIMHANS the needs of these patients cannot be satisfactorily met. Therefore there is a need to establish neurology and neurosurgery in the Government medical colleges.

Recommendations

- *The Government of Karnataka must initiate immediate and energetic steps to establish Neurology and Neurosurgery services in all the four government medical colleges. The requirements for a Neurology unit and Neurosurgery unit are given in annexures 1 and 2*
- *Train physicians and general surgeons at taluka and district hospitals to manage neurological disorders and head injuries and refer patients, when necessary to the Medical Colleges / NIMHANS, Bangalore.*

Annexure – 1**REQUIREMENT FOR ESTABLISHING NEUROLOGY
UNIT IN MEDICAL COLLEGE****1. Staff**

- (i) Consultant Neurologists - 3
(1 Senior, 1 middle level and 1 junior consultant Neurologist. The consultants must possess superspeciality degree of DM Neurology, with experience of a minimum 7 years for senior consultant, 4 years for middle level and 1 year for junior consultant after completion of DM degree in Neurology).
- (ii) Residents / House Surgeons - 6
(MD Med./ MBBS)
- (iii) EEG Technician - 1
- (iv) Adequate ward Staff

2. Special equipments

- (i) Electroencephalograph machine (16 channel) - 1
- (ii) Electromyography machine (2 or 4 channel) - 1

3. Inpatient services

25 beds for providing inpatient services
(10 for men, 10 for women and 5 for children)

4. Outpatient services

Outpatient services should be made available on at least two or three days a week.

5. Neuroradiology and Imaging equipment

- (i) X-ray
- (ii) Myelogram
- (iii) CT Scan

Annexure – 2

REQUIREMENT FOR ESTABLISHING NEUROSURGERY UNIT IN MEDICAL COLLEGE

Neurosurgical unit to have 30 beds with 10 beds for trauma, 5 beds for ICU and 15 beds for elective cases.

1. Staff

(a) Medical

- | | | |
|----|-------------|---------|
| 1) | Consultants | -2 Nos. |
| 2) | Residents | -4 Nos. |

(b) Nursing:

- | | | |
|----|-------|------------|
| 1) | Wards | -12 nurses |
| 2) | ICU | - 8 nurses |
| 3) | OT | - 8 nurses |

Adequate group D staff:

2. Operation theatres:

- | | | |
|----|-----------------------------------|-------------|
| 1) | Elective surgery | - 1 OT room |
| 2) | Emergency, available for 24 hours | - 1 OT room |

3. OT Equipments

- | | | |
|----|---|---------|
| 1) | Microscope with micro instruments | |
| 2) | Controlled suction | |
| 3) | Unipolar and Bipolar coagulator | |
| 4) | OT table with facilities for adjustable positions (either manually or electrically) | |
| 5) | Radio frequency lesion generator | |
| 6) | Surgical instruments for craniotomy | -3 sets |
| | Laminectomy | -2 sets |
| 7) | Blood gas analyzer | |

ICU (5 Beds)

Equipments – ventilators – 3 numbers

ICU Monitors – 5 nos. with facilities for invasive blood pressure, temperature, pulse oxymeter, ECG, invasive pressure monitoring equipment.

6.2.4 HEAD INJURIES AND TRAFFIC ACCIDENTS

Road traffic accidents are among the leading causes of mortality and morbidity in our state. The estimates of the number of people killed, suffering and disabled exceed the problems of curable and preventable diseases. With the changing economic reforms, industrialisation and modernisation, accidents are bound to increase over a period of time increasing death and disability. Studies reveal that the percentage of head injury due to road traffic accidents in Bangalore is 62% (Gururaj G Neurology India Suppl; 43:95-106). **There is enough evidence that indicates the increase in head injuries due to accidents after the withdrawal of the helmet rule.**

Head injury from all causes in Bangalore was found to be in the range of 120-160 per 1,00,000 with a mortality of 14-20 per 1,00,000 population. Head injury due to traffic accidents forms nearly 20-62% of them; the highest is in Bangalore. Further, the NIMHANS study at Bangalore suggested 68% of death due to head injuries are due to road accidents.

Consequences: Damage to brain due to head injury may lead to death, serious brain injury or long-term psychosocial and neuro-physiological problems. These include immediate manifestations like concussion, contusion, laceration, internal haemorrhage and post-traumatic epilepsy. The long term effects include, chronic haematoma, personality problems, dementia, intellectual defects, headache, speech problems and behavioral disorders.

Whenever head injury occurs, it affects the person, family, and society. The cost of management is shared by the family, the hospital and the insurance company. If the person survives with disability, the family is burdened both economically and psychologically. Further, the cost of death of a young productive individual, his treatment and rehabilitation is enormous.

Helmet use by Two Wheeler riders

There are many contributory causes of traffic accidents like careless driving, bad roads, heavy and disorganized traffic and poor vehicle maintenance. The study conducted by NIMHANS on epidemiology of head injuries in Bangalore, reveals many interesting facts about the two-wheeler and helmet.

1. On an average, 60-80 two wheeler riders (including pillion riders) meet with head injuries every month out of which 6-8 succumb to death. It forms 48% of road accidents, leading to head injuries. Out of the head injury admissions nearly 10% die during the hospital stay.
2. Deaths among those who were not wearing helmets was 2 times more as compared to those with helmets. The severity of head injuries was more and skull fracture was 1.2 times more among those without helmets.
3. Use of crash helmets by riders of two wheelers would decrease head injuries by 30-50% (Status report on head injuries, NIMHANS 1993).

Crash Helmet: Amongst the several preventive strategies suggested for prevention of head injuries, wearing of helmet is one of them. The NIMHANS study and several other studies from abroad suggest that helmets offer protection and reduce severity, disability and fatality in head injuries.

The amendment made by the State Government, in exercise of the powers conferred by Section 129, 138 R/W section 212 of Motor Vehicles Act 1988 is unfortunate. Because of this amendment if we go back to section 230 of the Karnataka Motor Vehicles rules 1989, the effect is that the driver or a rider of a motor vehicle having 11 B.H.P and less than that is not legally required to wear a helmet. It is known beyond doubt that the maximum BHP of any two-wheeler is 10.5, only barring certain types of motor vehicles that are not commonly used. (Status report on head injuries and helmets, NIMHANS, Bangalore.)

After examining the various aspects of head injuries due to road traffic accidents the Task Force on Health & Family Welfare is of the firm opinion that compulsory wearing of helmets must be reintroduced in Karnataka. This opinion is in the interest of the public and also the State exchequer. In a wider context it would enable the safety of the citizens, prevent tragic loss of life and improve the quality of life.

Controversies: Several spurious arguments are put forth by those who oppose helmet laws. These are: helmets are unsafe, cause hair loss, increase sweating and discomfort, diminish hearing and range of vision. There is also an argument that helmets cause strangulation and neck injuries that is not based on facts.

There is no validity in most of the arguments, when one compares the hazards of not wearing a helmet. However, there is a need for an improvement in quality of the helmets.

Recommendations

- *Helmets are essential to protect the two wheeler rider and pillion rider from severe, disabling and total head injury. The law regarding compulsory wearing of crash helmet by riders and pillion riders of two wheelers must be re-introduced.*
- *It is essential to educate the public regarding the road safety measures and benefits of wearing the helmet. Education and enforcement are complementary.*
- *The collective observation from the legal and epidemiological point of view demonstrate a need for making amendment in the existing act and compulsory wearing of helmets by the riders of two wheelers must be reintroduced.*
- *It needs to be ensured that sufficient quantities of quality helmets are available in the market.*
- *A combination of education and enforcement measures is required for promoting helmet usage in public.*
- *An Integrated approach to road accident prevention and control will yield long term benefits. Frequent changes and amendments in legislation will have a negative result as seen elsewhere. Bringing about policy changes on a scientific basis will give a firm foundation and rationale for the proposed changes.*

7. NUTRITION

There is rampant malnutrition in Karnataka, inspite of average availability of food being relatively adequate. This has not assured nutrition security. Progress in health requires good nutrition.

Percentage distribution of children (12-71 months) according to nutritional grade

Gomez classification, 1996 - 97	
Status	Percentage
Normal ($\geq 90\%$)	9.4%
Mild malnutrition (75-90%)	39.0%
Moderate malnutrition (60-75%)	45.4%
Severe malnutrition ($< 60\%$)	6.2%
Total	100.0%

Source: NNMB Rural, 1999

The issues relating to nutrition, as a parameter that impact on health status of the population are:

1. Nutrition issues relating to the vulnerable groups: infants, pre-school children, school going age children, expectant young mothers and elderly people;
2. General nutrition issues that relate to the population as such – these include the efficacy of the public distribution system (PDS), purchasing power of the people; nutrition education of the public and in medical schools and nursing schools for doctors and nurses.
3. Monitoring of nutrition, data requirements, reporting and evaluation systems and feedback for policy formulation and management for enhancing the nutrition status of the population.

7.1 ISSUES RELATING TO VULNERABLE GROUPS

In the case of **newborns and infants**, the improvement of survival rates depends on the health of the mother and proper breast feeding practices. The fact that the infant has to be breast fed soon after birth and why this is necessary is not sufficiently known. Only about 5% of the newborn are put to breast immediately after birth (within 1 hour). Another 18% start breast feeding within 24 hours of birth. Majority of mothers (67%) squeeze out the colostrums before beginning to breastfeed. The benefits of colostrum must be emphasized.

All mothers should be encouraged to have **breastfeeding exclusively** for the first 6 months. At present, exclusive breast feeding is only 69% for infants in the age group of 0-3 months. Breast feeding should be continued as long as possible. A majority of women do continue breast feeding till about 2 years.

The **weaning period** (after exclusive breastfeeding) between 6 months and 18-24 months is critical. Semisolid foods must be introduced progressively, while continuing breast feeding.

Rampant malnutrition exists during this period. Mother is often away at work, usually in the unorganised sector and breast feeding and supplementation of food do not take place.

Pre-school and school going age children also need greater attention.

Adolescent girl : With inadequate nutrition, discrimination and loss of blood during periods, there is gross undernutrition, with pronounced anaemia.

Pregnant mother : With increasing demand by the growing child there are unmet nutritional needs. It is often compounded by certain beliefs and behaviours. Periodical weighing of the pregnant mother to note weight gain and action should be taken to maintain the weight gain optimally.

Delivery : There is loss of blood, which can be substantial.

Lactating mother : There is greater need for wholesome food to provide for the growing child.

Nutrition of the **elderly** is an issue of concern. This is especially so in the case of the widowed elderly. Their nutritional needs may not be met adequately.

During all these periods, government and the people must assure good nutrition (available, accessible and affordable) and if necessary, provide free or concessional nutritious food to the poor.

7.2 INTEGRATED CHILD DEVELOPMENT SERVICES

The ICDS and the school-feeding programmes need to be improved. The ICDS programme, which has 185 projects, including 10 urban projects, caters to the young children and young mothers. The coverage and adequacy of the inputs need to be studied. Often the coverage is only of children of 3-6 years. It is not geared to cater to children below 2 years of age. It would be necessary to obtain further information and discuss these with the officers concerned. A major problem has been in growth monitoring. Many of the balances available are defective and need to be replaced. Associated concerns are:

- Is the ICDS sufficiently spread out for adequate area and age coverage, accessibility and training of staff? What kind of restructuring is needed?

- Can the school feeding programme be enhanced by the use of local raw materials and with the establishment of local small scale entrepreneurs, to reduce too much centralisation with consequent management problems of timely distribution, storage and the like?
- Can additional nutrients be added – CFTRI formulae?
- Operationally, can a variety of mixed food items be introduced, including sprouted horse gram/green gram, rice with amaranths, kidney beans and the like? Can a reasonable choice be provided, taking into consideration regional availability and preferences?
- The ICDS and the school-feeding programme should preferably be based on the principle of local raw materials, local production and local distribution.
- Micro-nutrients such as iron, iodine and vitamin A in the school feeding programmes must be ensured. The sufficiency of use of oil in these programmes would need examination.
- Can we have better empowerment of the people, through improved information?
- Can we address non-nutritional problems that lead to malnutrition, e.g., safe drinking water (prevention of gastro-intestinal disorders) and better sanitation?

In the case of young mothers and pregnant women, the possibility of making available ready and nutritious food mixes to them through the PDS or through local women's organisations may be considered. The mechanisms of doing so would have to be worked out. In this case too, the principle of local raw materials, local production and local distribution should apply.

Dependence on food substances from abroad should be discouraged since it generally tends to distort food habits and introduces foods which are not necessarily better. Soya imports are a case in point. Similarly, palm oil cannot be considered better than gingelly oil – even if cost wise it is cheaper. It is said to be more difficult to digest.

It would seem useful to consider further the concept developed by Dr. Swaminathan of a "Nutritional Garden" consisting of drumstick plants (including use of the leaves), papaya, gooseberry, etc. There may be regional variation in the composition of the varieties.

Anaemia

Anaemia is a major problem at all ages and particularly among children.

**Percentage of children with anemia by age
Haemoglobin grams / decilitre**

Age in months	>11	10-10.9	7-9.9	<7
<12 months	43.8	20.8	33.7	1.7
12-23 months	21.9	20.2	48.7	9.2
24-35 months	37.8	16.4	36.8	9.0
Total	34.2	19.2	40.1	6.6

Only 34.2% of the children below 3 years have normal percentage of haemoglobin. Anaemia is a major problem in pregnant mothers. It can be tackled by the micronutrients intake of iron rich food and iron and folic acid. Among the other micronutrients, vitamin A (to prevent blindness in children and infections) and iodine (to prevent goitre in goitre prevalent districts) are important and adequate intakes must be assured. One dose of 100,000 IU of Vitamin A is given at 9 months and 200,000 IU given at six-month intervals to children below 3 years. The need for iodine is being met by the use of iodised salt.

School age children

Children of school going age may be in school or out of school. The nutrition of school children can be ensured in collaboration with the Department of Education. It is estimated that over 94 lakhs of children are enrolled in classes 1 to 10 for the academic year 2000-2001. Apart from nutrition and health check-ups, deworming can be carried out at least once a year.

The school curriculum can be used for nutrition and health education. The teachers need training to handle these subjects effectively. The children need help in self-learning to handle these subjects effectively. The children need help in self-learning for improving their own health and nutrition.

Out of school children need special attention. The Department of Health and Family Welfare Services can collaborate with the Panchayat Raj institutions to ensure better nutrition of these children.

Prevalence of anaemia in women (percentage) – NFHS-2, 1999

Age in years	Mild	Moderate	Severe	Total
15-24	29.3	16.4	1.7	47.4
25-34	25.4	12.5	2.4	40.2
35-39	25.8	12.2	2.7	40.7

Severe : < 7 g/dl
Moderate : 7-9.9 g/dl
Mild : 10-11.9 g/dl

7.3 THE PUBLIC DISTRIBUTION SYSTEM

The PDS is important since it seeks to establish a minimum degree of distributive justice in access to food. PDS serves the larger proportion of the poorer population. Its purpose is to enhance access to food to those whose purchasing power does not permit ready access to the open market. There are two groups – the below poverty line and the above poverty line. The emphasis has to be on the below poverty line. The system would need consideration from the health point of view with regard to:

- ◆ quality and quantity of food grains including ragi, oil and sugar made available;
- ◆ presence of micro toxins in the grain available from PDS;
- ◆ accessibility, timely availability;
- ◆ management of the distribution system to prevent malpractices;
- ◆ making available ready and nutritious food mixes to pregnant and young mothers through the PDS;
- ◆ other nutritious foods, such as red gram, that could be distributed through the PDS.

Organisational Issues

The involvement of the community in the PDS in the local area and in the nutrition programmes is essential for ensuring quality, adequacy and good management. The establishment of Women's Co-operatives for Food (as a Self Help Group) and the involvement of the women members of the Panchayats would need consideration. Similarly, with the agreement of government, well established NGOs could also be inducted in this system of community involvement. The NGOs could, in fact, help in training the local women's groups in their rights and responsibilities.

Food handling

Street foods need attention. It is necessary to ensure hygiene both with regard to the food served and the water that is used/drunk. In this context, courses in food handling would have to be considered. Street vendors could be trained in local areas, compensating them for the loss of a day's returns. Such training would also be useful for employees of the hotels, fast food outlets and the like.

General Issues and data needs

The nutritional status of the population, particularly in the rural areas and of the vulnerable groups such as the poor women and children, is dependent on the purchasing power, availability of food and ability to access the PDS in areas where the latter is prevalent. The socio-economic status of the household often determines its access to sufficient food, its requirements being conditioned by the work the members of the household do and its demographic composition.

The nutritional status varies over regions in the State. In particular, the morbidity patterns reflect the nutritional status.

There are other dimensions to the issue – the diet patterns of sections of the population vary, there is inadequate education on nutrition and there is an absence of social marketing in this sector. Even if food is available, the mix would be important, including oils, pulses and green leafy vegetables.

Malnutrition is widespread and it is reflected in deficiencies in eyesight, insufficient growth and development and other signs. It is in this context that the possibility of social marketing of cheaper infant mixes and mixes for pregnant women become important. The shelf life of such foods is generally small and therefore local production and distribution would become relevant.

For a reasonably efficient programme of reduction in malnutrition, the data on nutrition status and its parameters would need to be adequate and timely and mechanisms for evaluation of these data would have to be in place. For Karnataka State, the NIN has carried out the nutrition survey.

The assessment of deficiency of micronutrients in children, of anemia among younger women, would need particular attention. The prevalence of hookworm and iron deficiency would also need to be determined. Morbidity profiles of local areas, particularly of rural areas, would have to be developed. Such data would be particularly important for the rural areas where the problem of malnutrition is pronounced. The available data, the reporting systems and the use to which these data are put would bear examination.

Nutrition education must be introduced in medical education (all systems) and nursing education. Nutrition education of all the people is necessary.

It would also be useful if an interface is established between local agricultural and horticultural programmes and practices and nutrition programmes so that the former cater to the local nutritional needs, based on sound data of the nutritional profile.

Nutrition and Immunity

There is direct relationship between nutrition and immunity. Breast milk contains immunoglobulins, which protect the breast fed babies from infections. Diarrheas, measles, acute respiratory infections and other infections are more common in those who are undernourished.

Nutritional Security

Karnataka is fairly self-sufficient with respect to cereals but there is mild and moderate malnutrition of a high order. We have to eliminate malnutrition to improve physical and mental development and to assure a better quality of life.

Multi-sectoral co-operation

To reduce malnutrition, a multisectoral strategy is needed: Food, agriculture, health education, rural development, public distribution, and co-ordination committee can help.

Nutrition Education

Even when the food availability is assured, there can be malnutrition. There is need for massive nutrition education. It is necessary to ensure the proper use of food by the people.

Nutrition Policy

Policies for combating malnutrition must be based on food rather than “drugs”; farms rather than pharmacies. There has to be linkages between agricultural research and nutrition research. So also, there is need to tackle social causes of malnutrition. Malnutrition has peak and lean periods. It is possible to withdraw feeding and to augment feeding based on the peak and lean periods. Most importantly, there is need for full involvement of the people and for the political will.

Recommendations

We must have a holistic approach to solve the problem of malnutrition. The purchasing power of the poor must be increased.

- *Supplementary food supply to pregnant mothers be increased, based on the need; this can be assessed based on the gain in weight, after excluding other causes.*
- *Breast feeding to commence soon after delivery, to use the highly beneficial colostrums. Exclusive breastfeeding during the first 6 months. Breastfeeding to continue for 18-24 months (Method: education of the mother).*
- *Semisolid weaning (supplementary) food, adequate in quantity and quality, be given to the infant under the ICDS scheme. In the case of the poor, weaning food be supplied free to the infants above 6 months (Department of Health Family Welfare services with the help of the departments of Women and Child Welfare and Food Supplies).*
- *Growth monitoring to detect growth faltering, based on weights taken by anganwadi workers, with well-calibrated balances; follow-up action by the medical officers of PHC. If malnutrition is severe, admission and management.*
- *Prevent infection. If infection occurs, treat promptly.*

- *Free mid-day meals (nutritious) to poor school children. (Department of Education).*
- *PDS must be strengthened. More foods like ragi, other pulses and oil to be supplied to the green card holders (Food and Civil Supplies).*
- *Encourage the use of green leafy vegetables.*
- *Ensure supply of iron-folic acid to pregnant mothers. Ensure vitamin A prophylaxis. Calcium tablets to be supplied if indicated, to lactating and older women.*
- *Nutrition and Health Education (Health and Family Welfare Services, Medical and Nursing Colleges and schools, University departments of Nutrition and Home Sciences); Nutrition education of the public.*
- *Improve access to health care of infants, children and pregnant mothers to PHCs and CHCs with the help of Paediatricians and Obstetricians and Gynaecologists.*
- *Safe drinking water and improved sanitation to prevent diarrheas and worm infestation.*
- *Periodical (once in a year) deworming.*
- *The District Nutrition Officer will co-ordinate the nutrition programmes in the district.*
- *Every house to have a kitchen garden. The Department of Horticulture to help with supply of seeds, seedlings, etc and promote the development of kitchen (nutrition) garden with drumstick plants, green leafy vegetables, etc. Every PHC to consider possibility of developing a demonstration plot.*
- *Constitute an interministerial co-ordination committee (Health, food and civil supplies, agriculture, education, rural development and social welfare) to tackle the problem of malnutrition.*

8. WOMEN AND CHILD HEALTH

8.1. WOMEN'S HEALTH

Why the need to look at Women's Health as a separate agenda -

- Consequences of poor health of women, as against those of men, are far greater since their poor health translates into poor health of families, particularly the children who represent the future generation. A mother's death has twice the impact of a father's death on child survival. "Women - Days- Lost" due to ill health therefore includes many hidden but critical factors which impact on the family and in the larger context on the health of the community and the nation.
- Also, gender related factors impact negatively on all issues related to women, including health.

Health status of women in Karnataka

The overall health and developmental status of women in Karnataka has improved over the past several decades. But, the improvement does not compare favourably with that of States like Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra etc.

There is considerable **disparity** between Rural & Urban Karnataka, between males and females and regional disparities with the districts of Raichur, Koppal, Gulbarga, Bidar, Bellary, Bijapur and Bagalpur characterized as category C due to poor health and other developmental indicators.

Some Health Indicators of Karnataka:

Infant Mortality Rate (IMR)

The IMR is 58 according to SRS 1999. IMR is 69 for Rural and 24 for Urban areas and varies from 29 in Dakshina Kannada to 79 in Bellary.

The **Maternal Mortality Rate (MMR)** according to UNESCO is 450. But recent estimates by SRS (1998) places it at 195 per 100,000 live births.

Life Expectancy at Birth (LEB)

The International Conference on Population Development had resolved to target LEB of 70 by 2005 and 75 by 2015. Karnataka has only reached 62. LEB of women was higher than that of men throughout the State, but the difference ranged from the highest of 9 in Kolar and Hassan and only 0.62 in Bangalore (Urban). LEB was highest in Dakshina Kannada with 68.82 and lowest in Bellary with 57.12 years.

Developmental Indices of Karnataka - HDI and GDI

The Gender-related Development Index (GDI) measures the overall achievements of women and men in three

dimensions of the Human Development Index (HDI) -life expectancy, educational attainment and adjusted real income and takes note of inequalities in development of the two sexes. The methodology used imposes a penalty for inequality such that the GDI falls when the achievement levels of both men and women in a country go down or when disparity between their achievements increases. The GDI is therefore the HDI discounted for gender inequality.

Though the GDI and HDI are not comprehensive and do not cover all aspects of human development they serve to highlight disparities within the State as well as the consequences of gender discrimination.

According to the 2001 census the **Gender Ratio** in Karnataka is 964 women for 1,000 men, a small improvement over the previous decade. This is worse than in Kerala, Andhra Pradesh, Orissa and Tamil Nadu. The Gender Ratio is unfavourable to women in most districts except in Udupi, Dakshina Kannada & Hassan. The **IMR** for females is 72, and highest in Dharwad, Bellary & Bidar. Age specific mortality rates indicate that 26% of deaths of women occurred between 15 – 34 years of age as against 15% among men (1991 Census). Also there is a startling decrease in the sex ratio in the 0-6 years age group according to 2001 census.

Reasons for the poor health status of women in Karnataka:

- The efforts taken to address women's issues have been inadequate, distorted, vertical, top-down and have rarely emerged out of women's priority concerns. Gender disaggregated data is often not collected on women's morbidity, suffering and pain.
- Health seeking behavior of women: The ingrained gender insensitiveness in society has led to women themselves relegating their own physical and mental health, emotional and social needs as their last priority, if at all.
- The health needs of women are addressed by the RCH programmes, which are restricted to the reproductive phase. Very little systematized attention is being paid to their other health needs and much less to their emotional needs.

Factors for consideration:

Gender

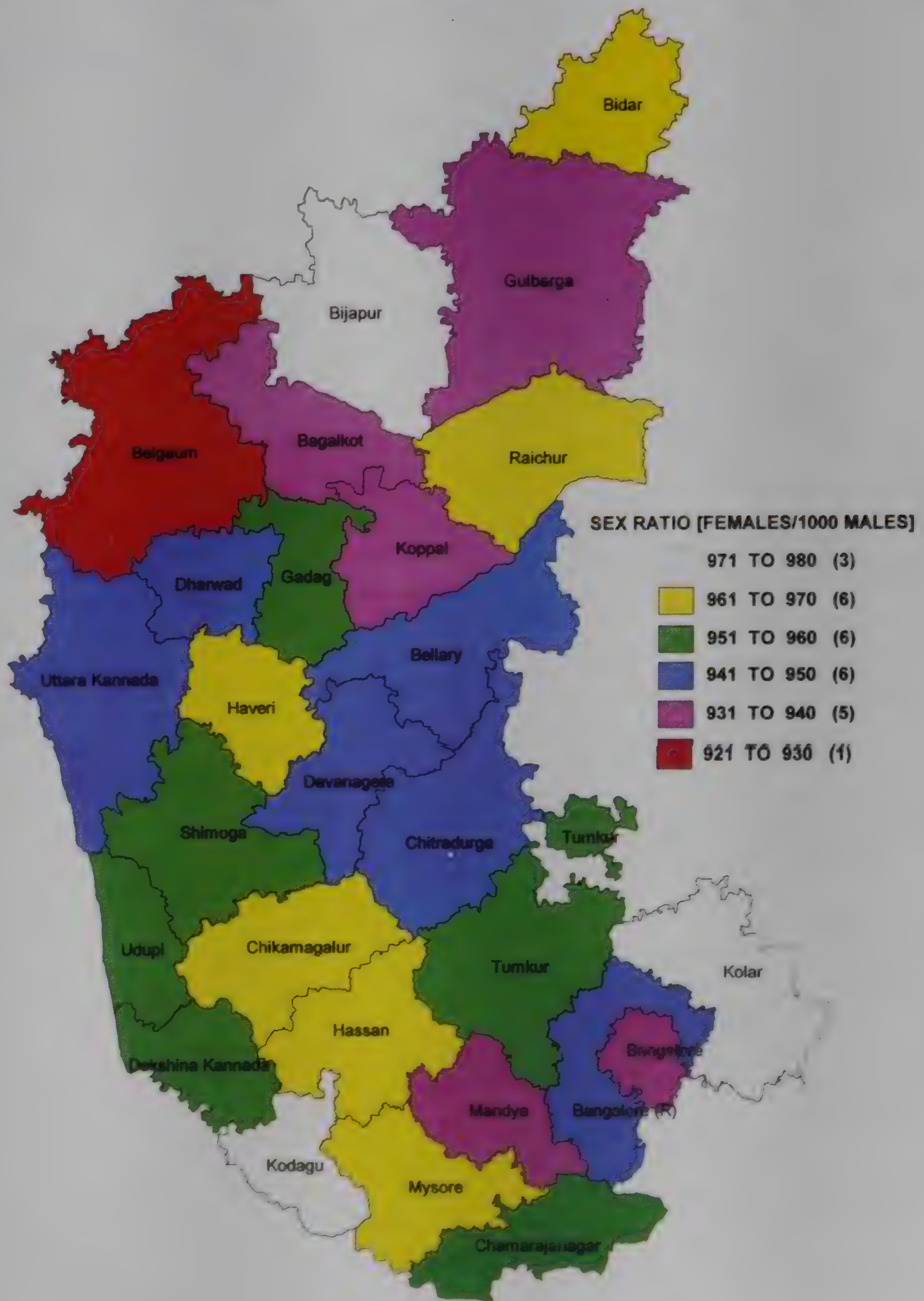
Gender is the different meanings and roles that societies and culture assign to people, based on whether a person is male or female. It is a strong, but often unacknowledged, part of what we learn as we grow up, for example, how we treat each other and ourselves.

This means that men are expected to behave in a particular manner, women in a different manner and transgendered persons in another manner. These divisions and roles are not equal between men and women, and women are usually given restricted roles to perform. This also means that the impacts of social phenomena are different on the different genders. These roles change with changing times as well as within communities from time to time due to factors like improved literacy, higher economic status etc.

Gender Discrimination

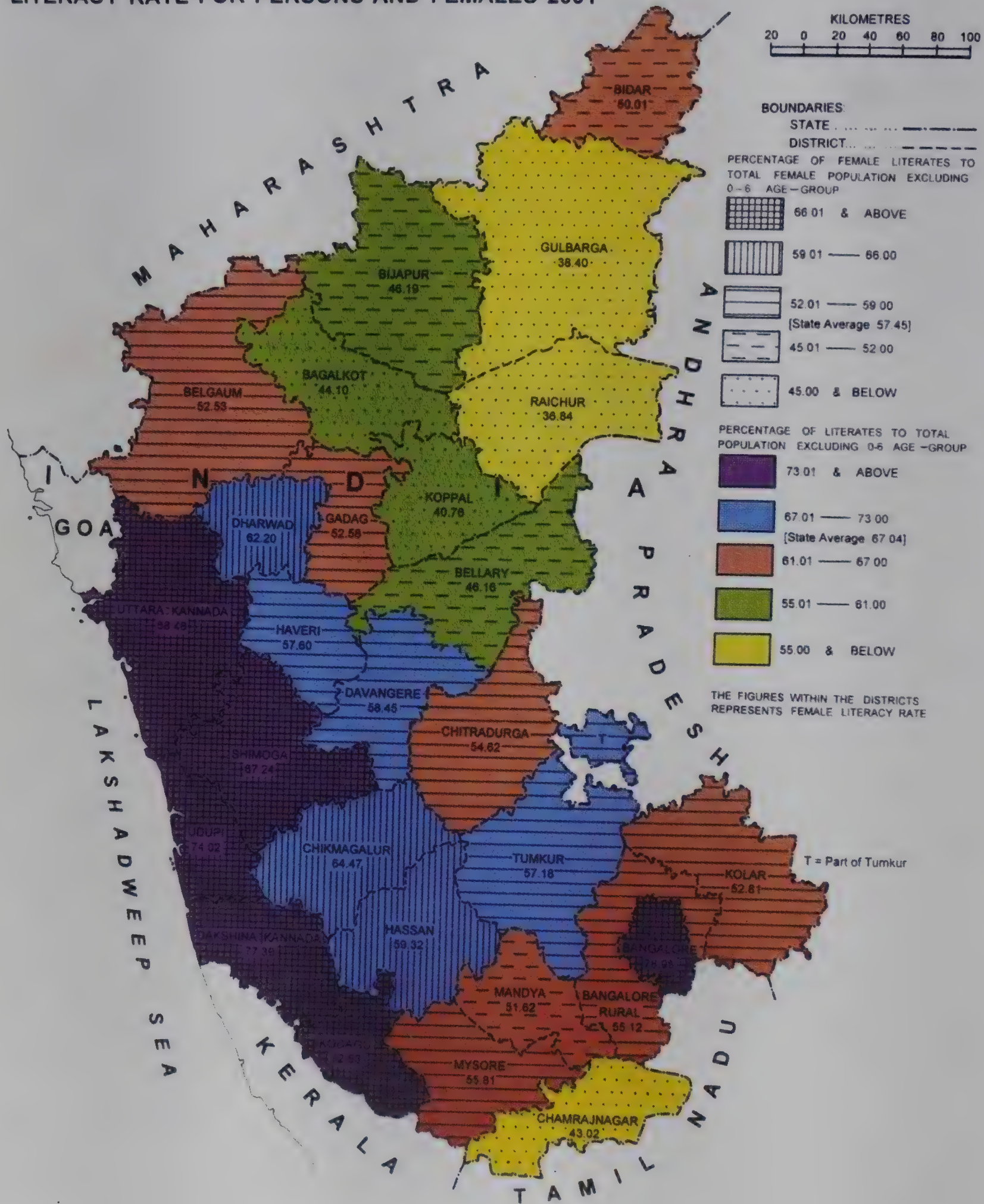
From the time of conception the girl child is discriminated against all her life. This includes being subjected to foeticide and infanticide and sexual abuse; being weaned from breast feeds earlier than male babies; her nutritional, health, emotional and other needs being given the last priority; having restricted access to education- either not sent to school at all or if sent, not allowed to complete her education in order to look after siblings or do household and other work; and are often married off during adolescence.

SEX RATIO IN 0-6 YEARS AGE GROUP - 2001



KARNATAKA

LITERACY RATE FOR PERSONS AND FEMALES 2001



The woman is required to meet the needs of her family before her own needs and acquires recognition as a family member only after she bears a child, and more specifically a male child. She has very little decision-making power and issues concerning her are marginalized.

When gender discrimination has been socialised and internalised, it is no longer visible to the gender insensitive. Unfortunately, religion, health care, education the legal system, employment and the media, reflect and promote gender discrimination. Men continue to control decision-making, limited family resources, women's sexuality, freedom of movement, access to the world outside home, etc. So women need a supportive environment to ensure that they are fed adequately, are educated and can make decisions regarding their life and their children.

Gender sensitivity

Gender sensitivity is an understanding and consideration of different needs of women and men arising from their unequal social relations and that a policy or programme can thus benefit women and men differently.

Gender sensitive indicators

Gender sensitive indicators are required to measure the integration of gender sensitivity into any given programme. They will point out changes in the status and roles of women and men over time, and therefore measure whether gender equity is being achieved.

Gender issues related to health care:

Even when available, health care services are underutilized by women:

- They are occupied all day with work related to childcare and household tasks, and work outside the house, and often neglect illnesses in the early stages.
- Health services available are insensitive to women's needs. They are staffed with male workers; privacy is ignored; the timing is inconvenient and long waiting periods result in lost wages.
- Access to health care facilities is inadequate. These include factors like long distances; lack of transport and even when available an inability to pay for it; a lack of independence that prevents them from leaving their homes alone and restricts them from using their own income or savings; the expenditure incurred even in the supposedly free health care facilities etc. This is especially critical when emergency care is required and is a major factor resulting in high maternal and neonatal mortality.
- The health needs other than those associated with their reproductive capacity are neglected.
- Their awareness of available facilities tends to be lower than that of men.
- They are also not aware of their rights and often do not think they have any.

In addition to specific actions taken to tackle gender issues in the Health Services, Inter-Sectoral participation is also essential.

- Access to adequate water, privacy while bathing, toilet facilities, etc. should be ensured.
- Gender sensitization of all government functionaries of all departments should be ensured, and institutionalized within government training systems at the entry and in-service levels.
- Women's issues and perspectives must be part of every sectoral plan/programme and not be limited only to the department of women and child development.
- Every department should prepare a women focused action plan. Gender analysis and gender audit of all plans, programs and policies both before and after should be made compulsory. Institutional capacity

should be created within all ministries to ensure implementation and independent mechanisms, which include participation of women activists, for monitoring this.

- Laws pertaining to Inheritance and ownership of land and other assets may need to be changed to give fair and equal rights to the women. Necessary mechanisms to ensure their implementation should be set up, including awareness building.
- There should be advocacy for equal wages for men and women.
- The Gender Empowerment Measure (GEM) looks at the level of participation of women in the economic and political life in comparison with men through four indicators- the percentage of women in Parliament, as administrators and managers, as professionals and technical workers and the share of women in national income. The GEM and other gender indicators should be used as the basis for improving interventions and programmes to achieve Gender equity.

Poverty and illiteracy

Poverty coupled with Gender bias and poor socioeconomic status of girls and women limits their access to education, good nutrition as well as money to pay for health care and family planning services.

Though the enrolment in primary schools exceeds 8.2 million; percentage of children in age group 6-14 attending schools is 65.3 (rural) & 82.4 (urban) and drop out rates have declined from 69% in 1950 to 16.5%, still 2.6 million children (28%) in 6-14 age group are out of school. Girls participation has gone up from 44.5 in 1980 to 48 in classes 1 to 4 and from 39 to 45 in classes 1 to 7 and the drop out rates has declined from 73% to 17%. But still there is need for improvement.

Literacy programmes are not sustained despite good work in the early years. So the literacy rate is 56% for Karnataka but rural female literacy in Raichur is a dismal 16.48%

A low level of Female Literacy is a major factor resulting in high rates of maternal and infant mortality, female foeticide, skewed sex ratio and dowry deaths. Some reasons for girls not being sent to school are- to care for younger siblings, housework etc., for economic reasons, fear of sexual harassment and sexual abuse, far off locations, an overwhelming number of male students and a fear of not being able to get a groom with higher educational qualification than the daughter.

Women and Work

Wage earning empowers women in decision-making. Non-wage earners do not have this advantage and their contribution is not even recognized. The downside to this is the fact that very often women do not have control over their earnings. Also, work outside the home places an additional demand on the women who are already burdened with household work; reproduction and child rearing; and family demands- both physical and mental.

Girls start working earlier than boys, work longer and harder throughout their lives. The energy consumption in mere survival tasks of fetching fuel, water, fodder, care of animals; washing; cleaning-which are exclusively women's responsibility, results in negative nutritional balance and calorie deficit. The situation worsens when women also have to perform hard labour for wages. They walk long distances to fetch water and fuel, especially in hilly areas; take care of large extended families; caring of children, elderly, sick husband and animals is done by women alone with little or no help.

All the above domestic work is unpaid work and is considered unproductive work. Even when women work outside the house, they do not get equal wages for equal work and are made to perform unskilled jobs that are poorly paid, more hazardous and demanding. They face various occupational health hazards. Rural women cooking in poorly ventilated huts using wood and cow dung cakes as fuel are exposed to 100 times the acceptable level of smoke particles. This is equivalent to smoking 20 packs of cigarettes a day and can cause Chronic Obstructive Pulmonary Disease. Women forced to earn their living as commercial sex workers are prone to infections like STDs, HIV, etc. from their male clients.

Malnutrition

Though the incidence of severe malnutrition has declined to negligible levels, problems due to milder levels of protein-calorie malnutrition, and deficiency of iron, iodine and vitamin A are seen among a majority of women and children in India.

Denial of adequate food to girls, partly due to non-availability and partly due to gender discrimination, results in the lower nutritional status of women. The height for age data shows that girls are more malnourished than boys in Karnataka indicating the influence of this inequality. This has life-long consequences for girls and their growth and development is jeopardized especially during the growth spurt associated with puberty and onset of menstruation. Early marriage and early pregnancy further deplete their inadequate reserves.

Other than the direct ill health caused, malnutrition and especially anaemia in adolescent girls shapes the nutritional status of women during pregnancy and lactation, and contributes to mortality and morbidity in infants and children. (Please see chapter on nutrition)

Post-Menopausal problems

Age-related and **hormone related problems** in women aged around 45 years or above, range from bleeding per vaginum / prolapse / Uro-genital problems /cancer / Cardiovascular risk / Alzheimer's disease / depression / etc.

Osteoporosis, leading to fractures and resulting problems like life long immobility following hip fractures for instance, is silent and caused by trivial injuries and even minor physical efforts like coughing, sneezing, lifting buckets etc. Bone Mineral Density test or Densitometry is a scan which provides a quick, painless and accurate measurement of bone density, but is accessed by very few. Osteoporosis is eminently preventable with adequate Calcium intake especially during the teens and early adulthood.

Psychological and psychiatric problems

Depression due to a variety of causes is seen in varying degrees from the milder Pre-Menstrual Tension to the most severe kind with suicidal tendencies. Postmenopausal depression is a problem in a large number of women but is not adequately diagnosed and therefore not documented especially at the PHC level. Often milder degrees of depression get exacerbated when the woman is subjected to violence. Conversely, underlying violence could present as depression. This co-relation of depression and violence is not perceived by health care workers and Medical Officers.

Tuberculosis

TB kills more women annually than all causes of maternal mortality combined. It is the leading cause of healthy years lost among women of reproductive age group [8.7 Million DALYs lost (TB) 2.5 Million (STD) 3.6 Million (HIV)]. This loss added to the cost of treatment, perpetuates poverty. And now, HIV and drug resistance is

increasing the burden of TB especially in productive years. Although the prevalence of pulmonary tuberculosis is lower in women, the progression from infection to disease is higher because of the delay in access to medical care. This is due to underlying problems of ill health, malnutrition, repeated childbirth; burden of work & childcare; fear & stigma etc. Children are more likely to be infected if their mother has TB than if their father has TB. Thus, not only does TB affect women more, women with TB have a greater negative impact on society.

Reproductive Tract Infections / Sexually Transmitted Infections :

RTI's can cause pain, dysmenorrhea, discharge, infertility, ectopic pregnancy following pelvic inflammatory diseases, etc. A large percentage of women are asymptomatic and therefore are unaware of the presence of any infection until complications ensue.

Prevention, control and management of these diseases amongst women form part of the RCH programme. But the ineffective implementation of this component, biological vulnerability to these diseases, the lack of power to negotiate responsible behavior from their sexual partners, all contribute to increasing incidence of these preventable diseases amongst women.

HIV/AIDS

Incidence & Prevalence:

NACO estimates the prevalence of HIV/AIDS in Karnataka upwards of 0.15 million. More than the numbers per se it is the trends, which is alarming. This includes the steady rise in incidence, with estimates that the numbers are doubling every three years, and the spread to the "general population" of women and youth. The sentinel survey data show 1% positivity among antenatal women. Women are also getting infected at an earlier age than men.

Gender and HIV/AIDS

Lack of responsible sexual behaviour in men is clearly due to the gender roles. Women have fewer choices and little or no decision-making power, both within the private and public spheres. For many women, questioning the extra-marital sexual behaviour of their husbands or negotiating condom use or asking them to get contraceptive pills, means inviting violence.

Other Gynaecological problems:

Abortions

Medical Termination of Pregnancy (MTP) has been legalised under the MTP Act of 1971, under certain conditions, i.e. only prior to 12 weeks; and thereafter allowed if there is documented evidence and recommendation as a life-saving measure by two doctors.

The spiraling numbers of abortions reflect the increase in the number of inflicted, unwanted pregnancies which women have to bear. The majority of abortions are almost a substitute for family planning, as they are sought by married women, some being multigravida. Some are related to prenatal sex determination and foeticide.

Women also have to bear the consequences of the abortion, be it death due to bleeding or sepsis following abortion. 20% of maternal mortality is due to abortion-related causes. Despite availability of legal abortion services, a number of illegal abortions are still being performed by untrained people, using methods that are not medically approved leading to a high incidence of morbidity and mortality. The lack of awareness about the services; or a sense of shame and guilt, especially when it involves young unmarried mothers are some of the causative factors for this.

Infertility

Infertility is a medical as well as major social problem. There is a need to change public opinion and attitudes towards childlessness of women. Even if the problem is structurally or functionally in the male partner, it is the women who is labeled and not treated in society with empathy and acceptance.

Uterine Prolapse

Heavy work at construction sites, walking long distances on steep hills in search of water or fuel, or climbing 2-3 storeys up a narrow staircase with buckets of water, certain childbirth practices, such as pressing the abdomen during labour to hasten delivery also leads to prolapse of the uterus, especially if this is associated with a poor perineal muscular tone due to frequent pregnancies and malnutrition.

Cancer

Magnitude of cancer problem in Karnataka

Magnitude and patterns of cancer in Karnataka are well documented by both Population Based Cancer Registry and Hospital Based Cancer Registry of Kidwai Memorial Institute of Oncology (KMIO).

About 35,000 new cancers are estimated to occur in Karnataka. The average annual age adjusted incidence rate of cancer from 1982 -1991 was 113 per 100,000 in males and 138 per 100,000 in females. The higher incidence of cancer in females is due to the greater proportion of cancer of the cervix and breast. PBCR data shows these two sites of cancer constitute over 40 percent of all cancers in women, accounting for over 11,000 cancer cases in Karnataka in 1994. It is estimated that by year 2000, there will be 5447 new tobacco related cancer cases in Karnataka among males and 3507 among females.

Factors leading to this high incidence include changing life-styles; high incidence of risk behaviour - both sexual as well as substance abuse; lack of personal and reproductive hygiene etc. Lack of clean water; poverty, gender inequality etc. are other indirect factors.

In terms of prevention of cancer, whether by primary or secondary prevention, over 60 percent of all cancers in males and nearly 40 percent of cancers among females fall into this category. But, as per the HCR about 85% male patients and 90% of female patients present when the disease has spread beyond the site of origin. It is difficult to give one single reason for this phenomenon.

A combination of factors like lack of awareness, economic conditions, inadequate access to proper diagnostic facilities, fear of the disease and poor knowledge of the outcome of treatment could possibly contribute to the advanced stage of presentation.

Cancer Cervix

It is estimated that by year 2000, there will be 5503 new cervical cancer cases in Karnataka.

The study conducted between 1980 and 1986 by the Department of Oncology, Kidwai Memorial Institute of Oncology found that, cancer cervix formed 40% of female malignances and 88.47% of all gynecological malignances. About 84% of these women were between the ages of 35 & 64 years; only 0.32% of cases presented for treatment at stage 0 and in the majority (97.1%), cancer had spread beyond the cervix at the time of diagnosis.

Reasons for delay in seeking treatment were: lack of awareness of the symptoms of cervical cancer (57.6%) and inadequate advice by medical personnel to whom they had reported their symptoms (33.7%)

Early Diagnosis of Cancer Cervix

Since treatment of pre-invasive cases markedly reduces cervical cancer mortality and prognosis declines considerably as the stage of the disease advances, the primary goal of public health efforts should be to promote early detection through screening programmes.

Cytology-based screening in India is not feasible due to the scale on which it is required (and the concomitant level of resources), and the lack of quality control. An ICMR study in 1986 estimated that even with a 12-fold increase in cytology services only 25% of women at risk could be covered by the year 2000 AD.

But screening by visual inspection of the cervix "downstaging cancer cervix" if used can detect early stage disease in about 50% of cases compared with the current 5%. A number of women below the age of 35 years have cervical dysplasia, but only a very small proportion will develop a malignancy. Thus, for a cost-effective screening programme, screening should have a high coverage of women above 35 years, and should have a low frequency.

Breast Cancer

It is estimated that by year 2000, there will be 2949 new breast cancer cases in Karnataka, many of them presenting at late stages for treatment. A study conducted in Bombay points to an increasing incidence of breast cancer among the urban women, especially among the elite due to factors such as increased age at first pregnancy, fewer children, decreased lactation etc. This is in contrast to the incidence of cancer cervix, which is seen more among the rural as well as urban poor due to poor reproductive hygiene; higher incidence of STDs, numerous pregnancies etc. Infection with the Human Papilloma Virus (HPV) is also implicated as a causal factor.

Early detection of these cases can be implemented by awareness about self-examination of the breast by women as well as annual examination by a medical officer. Mammography is also recommended but is not affordable by the majority of women.

Violence against Women

Violence against women covers the whole gamut of domestic violence, sexual violence, sexual harassment, rape and sexual abuse, marital rape, forced prostitution; dowry related violence; abuse of children, neglect of widows and elderly women, etc. It has been recognised as a major public health and women's health problem, and occupational health hazard.

Despite a history of law reforms and increasing visibility around sexual violence, violence against women has continued unabated in India. A first-ever study in India conducted by the International Centre for Research on Women found that 45% of the women interviewed were victims of domestic violence. These figures are an underestimation according to researchers, as women were not willing to talk about it.

According to a research carried out in 1997-98 by RAHI, a support centre for women survivors of incest, 76% of 600 women interviewed had been sexually abused in childhood or adolescence. 80% of rapes are perpetrated by relatives or men known to the women; 24% of rapes involve young girls, less than 16 years of age.

Domestic Torture constituted 30.4% of the total crimes committed against women in 1996, rape formed 12.8% of the total reported crimes against women in India. Humiliation through verbal abuse and forcing women to work like servants are extremely common.

A study conducted by Sakshi, an NGO working on women's issues, in March 1996 revealed that 72% of women respondents had heard or encountered sexual harassment at the workplace.

The number of “missing women per 1,000 men” is an indicator of the increasing violence against women. This according to Census of India 1991 is 73 for the country and 40 in Karnataka.

Violence against girls and women is prevalent among all-social classes and castes in India, touching women at every stage of life and linked to their low social status within a patriarchal society. Violence has its roots in the way men have been socialised to exert social and economic control over their wives and other females in the household. Control over women’s sexuality is an integral component of this process, where men believe they have the right to have sex with their wives regardless of whether or not their wives consented and justified wife beating as appropriate discipline when their wives refused sex. In a discussion by researchers with men in a Tamil Nadu village, the justification for violence was “A cow will not be obedient without beatings”. When couples are unable to produce children, it is the woman who is blamed, ostracized and abused, regardless of which partner is infertile or the cause of infertility.

Violence has a strong bearing on some of the most intractable reproductive health issues - unwanted pregnancies, forced abortion, HIV and other sexually transmitted infections and other complications of pregnancy. Clearly then, its implications on policies on issues like AIDS prevention, population control and ensuring reproductive health rights are immense.

Gender based violence leads not just to physical injuries, but also to psychological problems including depression and suicidal tendency. Mental cruelty by men with low self worth especially against women who perform better than them at work, jealousy towards wives are examples of violence.

Alcohol related Violence

Several studies show that there is a strong **co-relation between substance abuse and domestic violence**. It is also seen that violence during relapse is only during drinking. Failure to address domestic violence issues among substance abusers interferes with treatment effectiveness and contributes to relapse.

Woman’s response to violence is limited by the choices available to her. Women prefer to suffer silently and believe that men are justified in beating them; a way to survive in the marriage and protect her children and herself.

Though women with better education reported less violence, their economic independence does not seem to matter much when it comes to resistance.

The very nature and functioning of the present system of redressal is such that women would not want to approach it for succor till the situation seems to threaten their lives or more importantly, that of their children.

For the majority of women, there is no safety valve at all. Though some pick up courage to register complaints with police, the latter refuse to accept, dubbing them as “domestic problems that ought to be settled within the family itself”. They are directed by the police to undergo a medico-legal examination/ report. Even when there are obvious injuries, in the absence of a fracture these are recorded as only ‘simple injuries’ in which case minimal action will be taken. This kind of minimalisation leads to a lack of clarity regarding the violence suffered, as well as of their rights.

In 1989 the Supreme Court of India passed a judgement in which it used the moral character and conduct of a minor victim to reduce the sentence of two policemen who were convicted of gang rape. Expressions describing the minor as “lewd and lascivious”; criticism that she had taken seven days to report the crime; reflected in the judgement. Despite India’s constitutional promise of gender equality, judgements like this

demonstrated how gender bias, stereotypes and myths in dealing with the phenomenon of violence against women, impact on judicial decision-making.

The need of the hour is to change the irrational prejudices in society and myths and stereotypes that impact on the mechanisms of redressal available. There is a vital need for gender-sensitizing the police, lawyers and judges through an interactive educational forum to enable them to understand violence as women experience it.

Laws pertaining to women like laws related to rape, sexual abuse, sexual harassment, divorce, marital rape, domestic and other violence etc. have to be changed to empower women. This should also include changes in the legal procedures and processes to enable the women to have easy access to justice.

Child sexual abuse

Child sexual abuse is highly prevalent in our society, most of it hidden for obvious reasons. Even the best studies are only able to elicit history of sexual abuse from a small percentage of the total. Sexual gratification is seen as a normal need in males, but not so for females; is associated with a "Macho image"; an aggressiveness that is acceptable. Therefore most sexual acts by men, whether normal or deviant, and whether within legal and ethical boundaries or not is accepted and is forgiven. These are some reasons why in India, **statistically more girl children than boys are abused.**

With such emphasis on virtue and virginity in girls in our culture, sexual abuse in any degree is all that more traumatic. History of violence of other sorts in the family should alert the Health worker and Medical officer to the possibility of child sexual abuse in the family. Long-term effects include behavioral problems; inability to cope with ordinary everyday situations and relationships long after the abuse has stopped.

Female foeticide and infanticide

Biologically, 105 boys are born for every 100 girls. In the first year of life, through higher death rates among boys, these figures even out. Logically, there should be 1000 women for 1000 men. But Indian population statistics reveal a consistent and alarming decline in the population of women and, more importantly, girls right through the century.

The sex ratio in Karnataka in 2001 is 964 females for every 1,000 males. There is a decline in the number of children below 5 years. Whether the sex ratio is less in the group is not clear. One possible reason for this decline could be female foeticide/infanticide, due to deep-rooted gender bias in all sections of our society.

The reason for this is that daughters are perceived as an economic and social burden on the family because of the dowry system, their dependency on males and therefore a lower status of women and of course the son obsession in our patriarchal society. Most women feel that it is better for a female to die in the womb than to be ill treated later. On the other hand, the son is perceived as an asset, a breadwinner, capable of supporting himself and the rest of the family, a person who will continue the family lineage, perform funeral rights and support parents in old age. If unchecked, foeticide and infanticide will permanently damage the demographic balance in India. This will lead to an increase in sexual crimes against girls and women.

Prenatal Sex Determination

Prenatal tests like Chorionic villous biopsy, Amniocentesis and Ultrasonography, which should be used for detection of abnormalities in the foetus, are widely misused for sex determination by doctors. Ultrasonography, a non-invasive method done during 14-16 weeks of pregnancy, is presently the most sought-after, and has a success rate of 96%.

Moreover, doctors have been promoting female foeticide at the cost of woman's health through life threatening second trimester abortions. The use of pre-pregnancy sex selection by X-Y Separation is also increasing.

The Abortion Issue

The subject of selective female abortion is a highly complex issue raising many ethical and moral questions. The justification for liberal abortion laws in India is for health and humanitarian reasons and individual entitlement to an abortion by a woman. The government gave licenses to only trained doctors, some hospitals and nursing homes to conduct abortions on humanitarian grounds under aseptic conditions. It certainly did not give a license to kill at random and by no means on gender bias.

Legal aspects

The first law in India banning infanticide was enacted in 1870 during British rule. The Central government has begun to regulate prenatal diagnostic techniques. But the nexus between some doctors and private ultrasound clinics that help determine the sex of the foetus have led to a virtual epidemic of female foeticide.

Enacting laws regulating the conduct of the medical and paramedical fraternity alone will not check this deep-rooted social evil that originates from gender bias. Awareness about its dangerous consequences will help catalyse the evolution of a broad social movement against foeticide and infanticide.

Violence against women and girls at societal and household levels should be eliminated through strengthening of institutional capacity, involvement of women, and review of certain existing legal provisions.

A. Health Sector

1. Domestic violence

- Guidelines for addressing domestic violence should be incorporated into the national health policies.
- Diagnostic and treatment guidelines for domestic violence and emergency room policies and procedures for dealing with abuse victims should be developed.
- Privacy is essential when interviewing clients about domestic violence and this should be ensured.
- Health personnel should be trained adequately and sensitively to recognize signs of violence, to do early medical check-ups for trauma & give legal advice and counseling,

The health care giver should be trained to actively look for physical injuries, especially patterns of untreated injuries to the face, neck, throat, and breasts.

Other indicators may include inconsistent explanations for injuries and evasive answers, complications in pregnancy, stress related symptoms such as headache, backache, chronic pain gastrointestinal distress, sleep disorders, eating disorders and fatigue; anxiety, palpitations, hyperventilation, panic attacks; sad, depressed affect; or talk of suicide. The interviewer should be trained use concrete examples and hypothetical situations when asking about violence rather than vague, conceptual questions. They must also be familiar with common excuses used. For example- "I only pushed her," "She made me so angry, I didn't know what I was doing." "pressure of work"....

2. Substance abuse

- Substance abuse treatment programs and domestic violence programs should be linked and should include specialized counseling; a relapse prevention plan etc.

- All substance abusers should be screened for current and past domestic violence, including childhood physical and sexual abuse.
- Families have to be counselled to break the cycle of “violence - honey mooning - violence” that the abuser inflicts on them. It is extremely important to convey to the family that there is no justification for the battering; that substance abuse is not the real reason for the violence though it is often used as an excuse.

3. Child sexual abuse

- The Health care personnel should be trained to recognize signs of child sexual abuse which can include psychiatric problems, abnormal or inappropriate sexual behaviour, physical signs like genital / anal injuries / bleeding, staining of underwear, pain while passing urine or stools; sores / ulcers in and around genitals, anus or mouth, STDs etc.
- Long term psychological support for sexually abused children of a trained counsellor / psychologist / psychosocial worker / psychiatrist should be identified within the Health system.

4. Female foeticide and infanticide

Unless we actively look for female foeticide and infanticide, we will not find it.

- Gender disaggregated data on children born, as well as percentage of female fetuses aborted should be gathered and studied for trends which can specifically point to particular doctors / hospitals / nursing homes / ultrasonography clinics where female foeticide is being practiced.
- Information should be collected to estimate the incidence as well as to understand some of the causes. Religious leaders could be urged to spread awareness about gender issues, violence against women and the evil nature & consequences of female foeticide & infanticide.

IMA and other professional associations should:

- Disseminate information about Prenatal Diagnostic Techniques Act, 1994 among doctors on a war footing.
- Sensitize doctors on the gravity of the situation caused by selective female foeticide.
- Socially boycott known offenders.

B. Social support

- Mechanisms to help women and children in immediate danger from a batterer, including referral to women's shelters should be available.
- Legal, social and rehabilitative support for children abused by a close relative should be ensured through W&C department.
- For long-term support rehabilitation centres, community linkages, professional services including counselling, legal aid, social security and training in income generating skills, a directory of information on available support services are also necessary.
- The above services if provided by NGOs should have the active support of the Government.

C. Legal and judicial issues

- Police, lawyers and judges should be gender sensitised through workshops and training sessions, which would make them aware of the nature of violence against women, in particular domestic violence, sexual violence (including child sexual abuse) and dowry offences.

- The language employed in official court correspondence, decisions and oral communication when referring to women litigants, witnesses and lawyers should be gender sensitive and not derogatory to women, perpetuating traditional myths about women's roles.
- An advisory body of judges, legal activists and women's rights/human rights organizations should be constituted under the auspices of an autonomous body like the National Judicial Academy to review past judgements to highlight cases of gender bias, as a starting point of gender equality education
- Certain existing legal provisions and laws regarding rape, dowry etc. may need to be reviewed and changed.
- **Implementation of the 1994 law against female feticide and infanticide.**

The Karnataka government was most active in the first two years in implementation of the law. Thereafter the Appropriate Authority has lost interest and has not even met since 1998. They have refused to register ultrasound machines because of opposition from ultrasonologists.

- Urgent steps should be undertaken to correct the above to implement the law both in letter as well as in spirit.
- To effectively implement the law, criminalisation of female infanticide and victimization of people involved should be avoided. Otherwise we will not be able to reach out to these already marginalized women and backward social groups.

Empowerment

The management and monitoring of the basic health services that a community is entitled to by the community itself would go a long way to ensuring availability, accessibility and quality. The community should be capable of determining their basic health needs, evaluating the local health situation and the services that exist and improving upon them. In other words, to ensure that the people's health is the people's hands.

Empowerment of the community, especially women, adolescents, the poor and the marginalized to make informed choices in issues relating to their health, amongst other important decision-making issues is the single most important factor that needs to be addressed if the health status of the community has to improve.

Empowerment will enable them to demand and get the services they are entitled to. A strong and active Panchayat will be able to help achieve this empowerment.

Health education

While the provision of primary health care services (like immunisation; control of diarrhoeal diseases, acute respiratory infections, malaria, tuberculosis; and provision of antenatal and postnatal care) are important in the short run, interventions that focus on the underlying causes of ill-health are much more significant in the long-term. Continued emphasis on the curative approach had led to the neglect of the preventive, promotive and public health aspects of health care. Health Education will form part of the empowerment process and therefore will have to be addressed as a long-term, separate, planned activity.

Recommendations

While general recommendations regarding Nutrition, STD & HIV/AIDS; Cancer control among women etc. are incorporated in the specific chapters; some specific issues are emphasized here.

1. Recommendations to tackle gender inequality:

- A department headed by an Additional / Joint Director should be designated to tackle the impact of gender inequalities on health. Needless to say the head should have a thorough understanding of gender issues. This department can implement the following recommendations and also co-ordinate inter- sectoral action, as given earlier.
- All Health -care personnel should be sensitized on issues relating to gender inequalities. The curriculum for Medical Education and for training programs for health care personnel should include gender perspectives.
- Gender disaggregated data and gender sensitive indicators to evaluate gender equity should be integrated in all plans & programs. Examples of gender disaggregated data would include birth and death details, actual consumption or otherwise of the food and micro-nutrients supplied to pregnant women through the RCH / ICDS programmes; admissions & attendance at schools, hospital in-patient & out-patient records, immunization details, salary patterns for the same jobs and so on.
- This department should support research on women's health needs and the shortfalls in fulfilling them.
- The village level committee should ensure gender equity of all plans and programmes at the grass roots level.
- Awareness programmes for the community should ensure responsible behaviour by males.

2. Recommendations to address Violence against women:

Violence against women and girls at societal and household levels to be eliminated through strengthening of institutional capacity (especially Health, Police and Judicial Sectors); involvement of women, and review of certain existing legal provisions as detailed earlier.

Health Sector:

- Diagnostic and treatment guidelines for domestic violence and emergency room policies and procedures for dealing with abuse victims should be developed.
- Privacy is essential when interviewing clients about domestic violence and this should be ensured. The hospitals should be made women friendly.
- Health personnel should be trained adequately and sensitively to recognize and treat signs of domestic violence, sexual abuse & violence associated with alcohol abuse; give legal advice and counseling.
- Long term psychological support for sexually abused children of a trained counsellor / psychologist / psychosocial worker / psychiatrist should be identified within the Health system.

Female foeticide and infanticide:

- Unless we actively look for female feticide and infanticide, we will not find it. Gender ratio at birth and other indicators to show trends, underlying causes etc should be used for community-level control programmes. Religious leaders can be used to strengthen the programme.
- The Prenatal Diagnostic Techniques Act, 1994, should be enforced strictly.
- IMA and other professional bodies should be encouraged to sensitize doctors on the legal and ethical aspects; self-regulate and socially boycott known offenders.

8.2 CHILD HEALTH

Preamble:

The ages and stages in a child's life:

In 1999, the Indian Academy of Pediatrics (IAP) defined the age range of children, for the purview of Child Health and Pediatrics, as from birth to 18 years. This is a revolutionary concept in India, which had traditionally accepted the cut-off of 12 for pediatrics, from the days of the British Raj. Usually children from 13 years are taken to adult medical departments for any health problems. Since childhood is characterised by *growth, maturation and development*, at 13 it is too early to count a child as an adult. The Rights of the Child document of the UNICEF also defines the child as a minor, according to the law of each country. In India, voting right is given to all those who have become 18 years of age.

For convenience, both conceptually and practically, the different stages of a child's life may be divided as follows:

• Prenatal	Before birth	< 1yr
• New born / neonate	0-28 days	1-5y
• Infant / infancy	Below 1 year of age (First year of life)	6-10y
• Preschool child	Below 5 years of age (First 5 years of life)	>19 yrs
• School age	5 to 16-18 years of age	
• Teenager / teenage	13 to 19 years	
• Adolescent /adolescence	13 to 18-20/21 years	
• Youth	10 to 24 years	

Issues of concern in Child Health:

Child survival

The early part of childhood, especially the neonatal, infancy and even preschool age are a vulnerable period for many illnesses and adverse outcomes. Thus, child survival, especially survival with no damage to the processes of growth, maturation and development, is of prime concern in the preschool age period.

In many rich nations of the world, only less than 10 children are lost by death, during the first 5 years of life, among 1000 infants born alive. On the contrary, in India more than 100 would die before the fifth birthday. Of these, about 70-75 deaths occur in the first year of life (infant mortality). From the time of independence our infant mortality rate (IMR) has fallen reasonably steadily, but relatively slowly, from about 140/1000 live births to about 70-75 today. However, during the last 5 years, the IMR has not declined. In Karnataka, the estimated IMR was 81 in 1981 and 74 in 1991. More recently, the IMR estimate in 1998 by the Sample Registration Scheme (SRS) was 58. There is gross urban-rural disparity in IMR. The urban IMR is 25, while the rural rate is 70. This is a pointer to the deficiency of access to health care in the rural communities. The National Family Health Survey 2 (NFHS-2) has given the IMR as 51.5 in Karnataka. For comparison, the IMR in Kerala is 14 (SRS, 1999).

We do not have wholesome data on IMR based on registration of all births and deaths. On the other hand we collect information during decennial censuses, and in between by SRS and by NFHS. **We must strive towards achieving complete registration of births and deaths in all communities, as early as possible.** This is necessary not only for equity and quality in primary health care and in public health, but also for good governance

in general. In this age of information, storing and analyzing data are easy, but the collection of primary data is what the Government must now concentrate on. The decentralized administration is an ideal set up for achieving this.

Approximately one half of deaths during infancy occur in the first 4 weeks of life. This is referred to as neonatal mortality. High neonatal mortality is a clear signal of inadequate access to, or utilization of, health care services. **Unless neonatal mortality rate (NMR) is reduced, we will not be able to substantially reduce IMR.** Universally, the demographic indicator of the total fertility rate (TFR, reflecting the complete family size) and IMR are inversely correlated. **In other words, we must further reduce our IMR not only for the benefit of our children, but also for reducing our population growth. Similarly, we must reduce our TFR to improve child survival with quality.**

Table 15.1 : Childhood Vital Statistics : Karnataka (NFHS-2)

Childhood Vital Statistics	Karnataka
Perinatal mortality rate	47.8 / 1000 live births
Neonatal mortality rate	37.1 / 1000 live births
Post-natal mortality rate	14.4 / 1000 live births
Infant mortality rate	51.5 / 1000 live births
Under-5 mortality rate	69.8 / 1000 live births
Low birth weight	
Urban	27-56%
Rural	33-41%
Breast feeding within one hour of birth	5.4%
Exclusive breast feeding for first 6 months	3.2%

Interventions for child survival : The unfinished agenda.

Several child survival interventions had been applied in India over several decades. The expanded programme on immunisation (EPI) was established in 1978, and upgraded to the universal immunization programme (UIP) during 1985-1990. Since then there have been several national programmes like control of diarrhoeal diseases (CDD), control of acute respiratory illness (ARI), growth monitoring, oral dehydration, breast feeding, immunization, integrated child development scheme (ICDS), child survival and safe motherhood (CSM), integrated management of childhood illnesses and reproductive and child health (RCH). In spite of all these, childhood mortality continues to be high. The EPI /UIP has been a major success story, but it still remains an unfinished story. While the official reports in Karnataka show 100% coverage for all vaccines (Health Department Annual Report 1998-99), independent assessment indicates that the coverage of full immunization is in the range of 60-80% (Government of India Ministry of Health and Family Welfare. Evaluation of Routine Immunisation, 1997-98). The coverage of measles immunization has been assessed to be only 52% (Human Development in Karnataka 1999, p25).

Although we have been able to reduce the incidence of gross protein energy malnutrition, iron, iodine and vitamin A deficiencies, mild to moderate undernutrition, growth retardation and stunting continue to be highly prevalent.

Optimum nutrition is a major positive factor for child survival. Infectious diseases tend to be milder in well-nourished children, while they tend to be more severe and cause death more frequently in undernourished children. Repeated infectious diseases tend to cause negative nitrogen balance and induce undernourished state of physiology.

Prevention of diarrhoeal diseases

- **Exclusive breastfeeding upto six months**
- **Complementary feeding with fresh low cost weaning foods at 6 months along with breastfeeding upto 2 years.**
- **Personal hygiene (handwashing after defaecation, before feeding and before preparing meals).**
- **Provision of safe drinking water and good sanitation.**
- **Training of mothers to use house available foods, oral rehydration solutions and recognition of danger signs.**

Reducing neonatal mortality

There is urgent need to address the high neonatal mortality in Karnataka and to take remedial measures. For a large proportion of rural women, delivery is conducted at home. Trained birth attendants, or Dais, assist most such deliveries. The Dai assists in the delivery of the baby and then continues to look after the mother until the placenta is expelled and the mother is stable. During this time, women from within the household or the neighborhood handle the baby. They are not trained to care for the newly born. The infant has to be watched during the first 60 seconds for the establishment of breathing (usually heralded by the cry). Some infants do not breathe spontaneously, and are prone to develop **birth asphyxia**. Immediate interventions, by way of clearing the throat by suction, physical stimulus, or bag and mask ventilation, can make all the difference between a normal baby or a brain-damaged baby. This simple but crucial skill can be imparted by training, to women of ordinary intelligence. A second birth attendant, trained to receive and resuscitate the newly born baby, will be an asset to our health care system.

Interventions that can reduce neonatal morbidity and mortality

- **Antenatal care: Diagnosis and treatment of anaemia, UTI / RTI / TB, TT immunisation.**
- **Intrapartum care: Preventing prolonged labour, management of complications, clean delivery, clean cutting of the cord.**
- **Post partum care: Optimal care of the cord, early and exclusive breast feeding.**
- **Case management protocol for community care of sick neonates.**
- **Training of TBA, AWW and village level health workers in the identification and management of high-risk babies.**

Additional advantages of the availability of an advocate for the infant

The availability of a trained second worker, either a local volunteer, or a functionary of the primary health care system or the ICDS, will provide further opportunities to care for the new born and improve neonatal survival. For example, she could be trained to keep the baby dry, recognise and correct hypothermia, establish early

breast feeding and provide support for the mother for breast feeding – exclusive breast feeding – for at least 4 and no more than 6 months. She can also help introduce supplementary (weaning) feeds in a correct and clean manner. She could monitor the weight gain of the baby frequently, she could identify sickness or sepsis very early and either start therapy or immediately seek medical attention. She could continue counseling the mother on good immunisation practice, and on hygiene in food preparation. The same second health worker could be made a skilled resource person for oral hydration during diarrhoea, and for the early detection, management and referral of infants with pneumonia.

Improving immunisation services

Immunisation can be used for achieving further reduction of childhood morbidity and mortality, provided two issues are taken into account. The first is to improve the efficiency, coverage and effectiveness of the current immunisation programme, with the traditional vaccines. It has been noted that the high immunisation coverage levels are not being sustained. The literacy level of people is an important factor in parents themselves understanding the value of immunisation and taking responsibility to sustain high coverage levels. The second functionary, as described earlier, would be a source of information and support for the mothers of infants, guiding them to the correct schedule, helping them to go to the health centers and to be available in case of fever or local inflammatory reaction at the injection site. This approach is most likely to improve immunisation coverage levels in the community.

The success of an immunisation programme is to be measured not only by coverage evaluation, but also by two outcomes, namely the reduction of the incidence of the target diseases and the creation of demand by the parents for sustained immunisation services. The incidence of diseases is not being monitored, and this needs to be rectified by establishing a disease surveillance system for vaccine-preventable diseases. **A disease surveillance system, for vaccine preventable diseases, must measure the incidence of target diseases and to measure the success of immunisation by way of reduction in their incidence.** Such a surveillance system will also act as an important survey of the quality of immunisation programme in general and specific vaccines in particular. The second issue to be addressed is to systematically assess the need, the costs and the benefits of introducing newer vaccines in the universal immunisation schedule. The safety, efficacy and epidemiological need for newer vaccines must be assessed periodically by an expert group, for which purpose, **there is need to establish a State Advisory Committee on Immunisation Policies and Practices.**

Newer Vaccines

All newer vaccines are relatively more expensive than the traditional EPI vaccines. This is partly because most of them are the products of heavy investments in research, some even patented. Production costs are high and the number of manufacturers are few and market competition relatively low. Rich countries have been quick to introduce several newer vaccines as they find them cost-beneficial. In countries like ours, these vaccines remain in the private market, companies having to promote the product by advertisements, incentive for practitioners, and maintain stocks at their own risk and cost. For all these and for profit reasons, the prices remain high. The Government sees this price structure and shies away from considering them for routine use. The prices are likely to crash if the Government directly purchases such vaccines or obtains them through global tender purchase through the UNICEF. Even if the Government can purchase newer vaccines at lower costs, it may not be necessary for the Government to incur the entire expenses for disease prevention by immunisation. **As long as the availability of free or subsidized vaccines for the low income families is ensured, the rich may be left to obtain their immunisation in the private health care system, at no cost to the public sector health care system.**

The need to include Hepatitis B vaccine in the routine schedule

Hepatitis B virus infection is common, but silent, particularly in children. The chronically infected pool is high. A recent study in Karnataka has confirmed the prevalence of carrier state in the range of 3-5% even in children (Indian Pediatrics 2000;37:149). Most of the consequences of chronic Hepatitis B virus infection, such as *chronic hepatitis*, *cirrhosis* and cancer of the liver are seen in adults, but these are mostly due to infection acquired in early childhood. A large proportion of acute fulminant hepatitis is due to HB virus. **The State Government may consider a policy to introduce Hepatitis B vaccination in our universal immunisation programme.**

Other vaccines for urgent consideration by the Advisory Committee:

There are several other newer vaccines already licensed in India for use in children. They include the measles-mumps-rubella (MMR) vaccine, *Haemophilus influenzae* type b (Hib) vaccine, chickenpox (Varicella) vaccine, hepatitis A vaccine, three kinds of typhoid fever vaccines, and Japanese encephalitis vaccine. While the proposed Advisory Committee may examine the need for these vaccines in general, the two diseases typhoid fever and Japanese encephalitis deserve to be counted as major public health problems for designing special control measures including systematic immunisation.

Child nutrition

Since the nutritional status of exclusively breast fed infants is excellent during the first 6 months of life, it is important to ensure that such breast-feeding is ensured in all communities. However, growth faltering begins usually from the seventh month of age, indicating the inadequacy of complementary / weaning diet of the infant. What matters more is the quantity of food offered to infants, rather than what type of food is offered. Mothers tend to assume that the infant cannot digest foods and offer diluted food items, which often leads to deficiency in total calories. The infant can be given most of the food items eaten by older children and adults. A close watch on growth monitoring during the second 6 months of life is very important. If the velocity of growth is to be maintained, then mothers need counseling and support and this function can best be served on a one to one basis, by the infant's advocate described earlier. Literacy and mother's educational level also is another factor in good nutrition of the infant.

**Table 15.2 : Nutritional Status of Children in Karnataka
NNMB Survey, 1996**

Nutrition Status	Rural	Tribal	Urban
Normal	9.5	2.3	2.5
Mild malnutrition	38.6	15.1	37.7
Moderate malnutrition	45.5	49.1	53.3
Severe malnutrition	6.4	32.9	6.3

Early child nutrition has implications beyond the child's own growth and development. Low birth weight of newborn infants is a major contributing factor in high neonatal mortality rate. Undernourished girls grow up as short women and tend to give birth to small for date babies. This inter-generational effect of early nutrition is an important factor for child survival in the next generation.

Vitamin A deficiency in its severest form leads to blindness. It is necessary to ensure vitamin A supplementation to all children below 3 years of age. Colostrum, rich in vitamin A should be fed to all newborns. Nutrition education and linkage with the Horticulture Department for locally growing vitamin A rich fruits and vegetables should be part of the strategy.

Adolescent population

There is an increasing adolescent population with specific needs, which are not met by the present health and social structures. India's adolescents (10-19 years) population is estimated at 21.8%, and married adolescents at 20 per 1000 population. 6% urban and 21% rural woman aged 15 to 19 years married before the age of 15 years.

Adolescence is a period of transition from childhood towards adulthood. The body grows and acquires maturity in sexual characteristics and functions. The processes of growth, maturation and development span across the body, mind and spirit. It is a period of intense self-awareness and the development of personal identity. Yet, this is also a neglected period from the point of availability of care and guidance.

A majority of adolescent girls have nutritional inadequacies including under nutrition; stunting; iron deficiency and anaemia; deficiencies of other micro-nutrients like iodine, vitamin A; calcium, zinc and folate. This results in malnutrition during pregnancy and therefore to maternal and infant mortality and morbidity.

Adolescent fertility is estimated at 17% and contraceptive practice is very low. Unmarried adolescents (who constitute a sizable proportion of abortion seekers), often delay their abortions until dangerously late because of ignorance or fear of social stigmatization.

Two problems of adolescents stand out in our society. One is increasing prevalence of HIV infection in youth. Sexual behavior patterns which set in during adolescence can lead to sexual and reproductive health problems; RTIs & STIs; HIV/AIDS; the majority of new infections occurring in the age group of 14-24 years. The second is increasing frequency of stress-related problems, the culmination of which manifests as suicide, attempted or completed.

Other issues related to adolescents are sexual abuse, prostitution, street children, violence, suicide and substance abuse. It has been found that in the six major cities of India, 15% of prostitutes are below 15 years and 24% between 16-18 years of age.

Adolescents are capable of responsible behaviour and can take the right decisions if empowered with information and the freedom to do so.

They need health information and services particularly with regard to nutrition, sexuality and reproduction. There is need to promote reproductive health among adolescents. Right to factual information to maintain good health must be met, because in reality, peers and parents often give misinformation, pass on dangerous beliefs and practices or transmit a dis-empowering mind-set regarding sex and sexuality.

There is the urgent need and the opportunity to design and implement adolescent care and educational programmes. Family life education, basic understanding of sexuality, genital hygiene, interpersonal relationships and conflict-resolution, coping capacities for the stresses of increasing responsibilities and expectations of parents, teachers and peers and many such issues are the needs for authentic information for the growing adolescent.

Child labour

The challenge before us is to eliminate child labour by an integrated, multi-sectoral plan of action, which would cover rehabilitation, education, health care and vocational training. Public opinion has varied from total ban to prohibiting child labour in hazardous industries and regulating and improving working conditions in other industries. But the time has now come to ensure that all children of school going age are studying in school and their physical, mental and social development assured.

Children in especially difficult circumstances like street children and rag pickers need our attention. They are exposed to all kinds of hazards and infections. They are abused, physically and sexually, neglected and abandoned. Concerted efforts are needed to improve the quality of life of these children.

Recommendations

- *Have an additional health worker trained to receive and resuscitate the newly born along with other duties to be appointed by the Gram Sabha. This may be done as an experimental measure in the 7 northern districts found to have lower health status and extended, if found useful.*
- *Institute a disease surveillance system for vaccine preventable and other important communicable diseases.*
- *Establish a State Advisory Committee on Immunisation Policies, Practices, Monitoring and Evaluation*
- *Tackle the major childhood problems of diarrhoea (leading to dehydration) and acute respiratory infections.*
- *Develop Indira Gandhi Institute of Child Health as the apex body for training, service and research in child health.*

Recommendations for improved services for adolescents:

- *Health education for children and adolescents should be the responsibility of the Health as well as Education department. This should be integrated into the formal school system and should include nutrition; sanitation; reproductive health, RTI/STI; HIV/AIDS; substance abuse etc. Apart from this values and life skills; gender issues; etc. should be emphasised to ensure responsible behaviour. Alternate mechanisms to reach school dropouts should be identified.*
- *Provide access for teenagers to health service delivery points such as PHCs, subcentres and CHCs, ensuring privacy and confidentiality.*
- *Provide lab-diagnosis based treatment and counseling for RTI/STI; safe MTP services to all married/unmarried adolescent girls irrespective of age.*

8.3 REPRODUCTIVE AND CHILD HEALTH PROGRAMME

Reproductive health is the preventive, curative and promotional aspects as pertaining to the reproductive system and its functions in men and women.

Reproductive health should address the following aspects at all stages of people's life:

1. Sexual and reproductive rights
2. Information on, and interventions for, responsible reproductive & sexual behaviour.
3. Access to safe prevention and management of infertility.
4. Access to effective, affordable, and acceptable methods of fertility regulation of their choice
5. Elimination of unsafe abortion;
6. Appropriate health care services that will ensure safe pregnancy and childbirth
7. Effective control of reproductive tract infections and sexually transmitted diseases.
8. Prevention and treatment of malignancies of reproductive organs.

Factors that impact reproductive health include gender inequality; nutrition; infant and child health; adolescent health and sexuality; lifestyle, environmental; social and cultural behaviour. In Karnataka, as in most of India, there is minimal communication between husband and wife about their sexuality & sexual relations. Men generally have greater influence than women, in all family decisions, especially those related to reproductive intentions - contraceptive use, planning of pregnancies, number of children etc.

It is also important to note that though both men and women have problems related to the reproductive system, the suffering of women due to reproductive health problems is far greater. This is due to the fact that women alone are at risk for complications of pregnancy and childbirth; potential side effects from most contraceptive methods; consequences of unwanted pregnancy & its prevention & management including unsafe abortion; increased vulnerability to RTIs & STIs etc.

Maternal Mortality

WHO defines maternal death as "the death of a women while pregnant or within 42 days of termination of pregnancy, from any cause related to or aggravated by the pregnancy or its management, including abortion". 40 per cent of pregnant women develop one or more life threatening complications. Of these five main causes: post-partum hemorrhage, unsafe abortion, sepsis, eclampsia and obstructed labour account for 85% per cent of all maternal deaths due to lack of rational management of high-risk mothers and of those needing emergency obstetric care.

Indirect causes such as anaemia and malaria account for about 15 per cent of maternal deaths. For every women who dies during childbirth, around 18-20 women survive complications, for example, cervical lacerations, pelvic inflammatory diseases, anaemia, uterine or bladder prolapse, vesico vaginal or recto vaginal fistula, infertility, etc. Since it is not a matter of demographic concern, reliable figures regarding these complications are not easily available.

It is often forgotten that women also suffer from communicable and other diseases during pregnancy with attendant morbidity & mortality in the mother and the child. These include malaria, Viral hepatitis, Tuberculosis, Rheumatic heart disease, diabetes, etc. Malaria in pregnant women is associated with intrauterine growth retardation, spontaneous abortion and stillbirth. In the neonate congenital malaria presents within 48-72hr after delivery.

Parasitic infections like Amoebiasis, Giardiasis, Malaria, Nematodes etc. interfere with the nutrition of women and result in a worsening of the already critical nutritional status with resultant impaired fetal growth.

Medical complications during pregnancy also affect the child, which increases foetal and perinatal death as well as morbidity like premature birth, low birth weight and infection among children. Nutritional insults during the first trimester may set a low fetal growth trajectory and once set, the potential for later catch up in growth or functions appears to be limited.

Health and Family Welfare Policy

In the past, India's Health and Family Welfare Policy focused on meeting contraceptive "targets". The programmes virtually ignored women who were not of child bearing age (adolescent girls, single women, women with infertility and post-menopausal women). Even among child-bearing women, only sexually active women, especially those who had not yet "completed their desired family size" were targeted for reproductive care interventions. They failed to address the root causes of women's poor reproductive health status, and consequently did little to improve their general well being over the long term.

The International Conference on Population Development, held in Cairo in 1994, and The Fourth World Conference on Women, held in Beijing in 1995, emphasized the need to empower women to access services relating to all aspects of their health. It asserted that improvements in women's health needs should be met through the availability of affordable, comprehensive, integrated and holistic care, within easy geographical reach of women. Reproductive health and primary health care programmes are expected to address these gaps in health service delivery, mainly by dealing with the comprehensive health problems of women and incorporating gender equity concerns into their programmes.

Following this, the Government of India's Health and Family Welfare Programme changed to a more comprehensive Reproductive and Child Health (RCH) Programme offering the following:

- a. Prevention and management of unwanted pregnancies and family planning services including spacing and sterilisation as also providing services for MTP to women who choose this option in order to avoid incidences of unsafe abortion.
- b. Safe motherhood (ante natal, natal and post natal) services:

Antenatal care and identification and referral of high risk pregnancies to the first referral units.

- Immunisation with 2 doses of Tetanus toxoid
- Prevention, detection and treatment of anaemic pregnant women with Iron Folic Acid (IFA) tablets.

Natal Care

- Delivery as far as possible, in institutions under the care and supervision of trained qualified personnel or assisted by LHVs, ANMs or trained birth attendants. Emergency obstetric care services for high-risk labour cases

Postnatal Care - for 42 days after delivery of the placenta

- Advice and guidance to the mother about breast-feeding, nutrition, hygiene, care of the newborn and immunisation.
- Referral for immediate emergency obstetric care in case of fever foul smelling discharge, bleeding, abdominal pain, painful breasts, pain while passing urine and abnormal behaviour.

c. Diagnosis and treatment of RTI & STI**d. Child survival – care of new born**

- immunisation
- management of diarrhoeal diseases and acute respiratory infections.
- Vitamin A prophylaxis

RCH programmes in the rural areas

The RCH programmes in the rural areas are implemented through the Primary health care facility network of Sub-Centres and Primary Health Centres. The Community Health Centres (CHCs) and Taluka Hospitals are the First Referral Units (FRUs).

The ANMs play the major role in these programmes and are assisted by traditional birth attendants who also provide antenatal and delivery services. The ICDS programmes of Women & Child Department, through Anganwadi workers are responsible for ensuring access of the health care services for children up to 6 years of age. The Male Health Workers are supposed to focus on motivation of males to access family planning and other health care services.

RCH programmes in the Urban areas

Urban RCH programmes are within the ambit of the City Corporations or Town Municipalities. In Bangalore for example the Bangalore Mahanagara Palike has 30 maternity homes, 37 Urban Family Welfare Centres (UFWCs) and 55 health centres. In addition there are 25 dispensaries and some Ayurvedic clinics for general ailments under the BMP.

The IPP centres and UFWCs focus on routine out patient RCH activities, with field staff and link workers residing in the slums, who motivate mothers to utilise facilities and services for antenatal care, delivery, family welfare, immunisation etc. These centres act as referral units for the maternity homes which focus on delivery; medical termination of pregnancy (MTP) and laboratory tests in addition to providing antenatal / postnatal care, family planning, non-surgical care for children needing specialists attention and minor gynecological procedures. All the services at all these facilities are supposed to be provided free of cost but there is corruption, bribes being demanded for the services. The IPP VIII programmes are being extended to other urban areas.

- **Specialised facilities, staffed with trained gender sensitive health care providers of both sexes, were expected to provide the full range of reproductive health services to both men and women.**
- **Sub Centre plan: Unmet needs for Reproductive Services were supposed to be identified and quantified which, along with demographic data for that area and the previous years performance, would form the basis for the planning of the programme.**

Unmet need is defined on the basis of women's response to survey questions. The unmet group includes all fecund women who are married or living in union and thus presumed to be sexually active, who either do not want any more children or want to postpone their next birth for at least another two years, but not using any method of contraception.

However, at the field level, this paradigm shift has not become a reality, the target based functioning is still very much in practice and the programme still targets mainly women.

Health indicators

It is apparent from some of the health, developmental and other indicators that the RCH programme is not as effective as envisaged. This is true of Karnataka as also of most other states in the country.

The **IMR** is 58 according to SRS 1998. IMR is 70 for Rural and 25 for Urban areas and varies from 29 in Dakshina Kannada to 79 in Bellary. The IMR for females is 72, and highest in Dharwad Bellary & Bidar.

The **Maternal Mortality Rate (MMR)** according to UNICEF is 450. But recent estimates by SRS (1998) places it at 195 per 100,000 live births.

Family Welfare: The then Maharaja of Mysore created history when he started the first official family welfare clinics (birth control clinics) in Victoria and Vani Vilas Hospitals at Bangalore and Krishnarajendra Hospital at Mysore in 1930. Since then the Family Welfare programme has come a long way. The couple protection rate increased from 12% in 1971 to 48 % in 1993 and to 57% in 1995-96. This varied from 41% in Raichur to 73% in Mandya

But the emphasis of the programme is on sterilization (40% in 1993) and not on spacing (9% in 1993). Another disquieting fact is that over the years the participation of men in family welfare has reduced. The proportion of vasectomies in the total sterilizations in Karnataka increased from 43% in 1958-59 to 59% in 59-60 and to 95% in 67-68. It was 52% in the emergency year of 1976-77. But this fell to 0.1% in 1993-94, 94-95 & 95-96. 1992-93 figures also showed that fewer men (1.7%) than women (6.8%) adopted spacing methods.

The Second National Family Health Survey, 1998-99, showed that in the preceding 4 years:

- The emphasis on sterilization and that too among women was apparent from the 51.5% of married women being sterilized.
- Mothers received antenatal care in 86% of births, though mothers in rural areas were less likely to visit an allopathic doctor.
- Only 51% of live births took place in a health care institution but 70% were attended by doctors and 15% by dais.
- Nearly 25% of mothers did not receive even one dose of Tetanus Toxoid.
- 75% of mothers were given Iron & Folic Acid tablets but it is anybody's guess as to how many actually took them.
- Immunisation for BCG, DPT & Polio was good but for Measles it was only 67.3%.
- Nearly 42% of children with diarrhoea were not given Oral Rehydration Therapy of any sort.

Issues of concern in implementation of RCH programs:

Inadequacies in terms of infrastructure and delivery of services:

- The aim of the RCH program to attain 100% institutional deliveries may be a laudable one. But the inadequate capacity both in terms of numbers and the quality of services has led to a low proportion of institutional deliveries.
- Shortfalls in staffing requirements, especially lady medical officers, ANMs and trained birth attendants has lead to sub-optimal implementation of RCH programs. Large vacancies are aggravated by cumbersome recruitment procedures; unauthorized absence and indiscipline in work force.
- **The role of the Traditional Birth Attendants or Dais is very crucial especially in providing natal**

services. It was surprising to note therefore, that the Dai training program was abruptly stopped without ensuring functional alternatives.

- The Disposable Delivery Kit program also has been abandoned without insights into its functioning or the need for alternate measurements.
- **Training of birth attendants:** Initial and periodic reorientation training for all birth attendants are essential to ensure quality. There should also be periodic evaluation and up-gradation of the training programmes.

Some elements that should be included in this training are elaborated which would enable them to:

- a) Understand the CNA methodology, **assess the "Unmet Needs"**, work out a realistic plan based on actual preferences of couples instead of top-down, unrealistic targets; promote spacing & follow up and monitor people using contraception including referrals if necessary, and condom promotion.
- b) Achieve 100% registration in the first trimester;
- c) Enable trainee ANMs and Dais to perform a sufficient number of normal deliveries in the field.
- d) Take care of the newborn: Delay ligation of umbilical cord till it stops pulsating; ensure that breast feeds start within the first hour after birth, promote **exclusive breast feeding** till the baby is 6 months old.
- e) Perform "Visual Inspection" for down-staging of Cancer Cervix; carry out examination for Breast and Oral Cancers.
- f) Elicit information regarding STI/RTI (including history of risk behaviour from the sexual partner), refer to PHC, do follow up and counselling regarding responsible behaviour, condom use etc.
- g) Develop communications skills to elicit community participation; and leadership qualities to perform the specific functions that are expected of them at a sub-centre.
- h) During delivery, while the birth attendant looks after the birth component, the crucial needs of the newborn is ignored. This can lead to complications like asphyxia, hypothermia, infections etc. This is one reason for the increased incidence of neonatal and infant morbidity and mortality.
- i) The nutrition needs of the child between 6 months to 2 years does not get the attention it deserves. ICDS does not adequately cover this age group, leading to high rates of malnutrition amongst them. This leads to increased incidence of infections, delay in mile-stones and retarded physical and mental growth.
- j) **Maternal nutrition:** Weight gains of less than 4.3kg by 14 weeks of pregnancy approximately doubles the risk of "small for gestational age newborns" as well as incidence of preterm delivery regardless of total weight gain.

Therefore strategies aimed at improving the nutritional status of pregnant women, who are usually seen only after 14 to 16 weeks under RCH now has to look at pre-pregnancy nutritional status and correction of Iron and other micro-nutrients deficiencies.

Inadequate attention to quality

The quality of care framework developed by Judith Bruce (1990) uses the following indices to assess the quality of care received by clients:

Accessibility and availability of services; availability of basic facilities and essential supplies, choice of methods; information to users; technical competence; client-provider interaction; continuity of services; and appropriate constellation of services, including treatment for sexually transmitted diseases and MCH care.

In terms of these indices it is seen that the **quality of services is poor**. Lack of discipline, accountability and a lack of adequate training and motivation among the health care givers at all levels are factors that lead to the poor quality.

Often even the basic common courtesies are not extended. A telling evidence is the treatment meted out to the women at tubectomy camps, where numbers score over the entitlement of the people. The undignified and very uncomfortable posture the woman is made to assume on the tilted "laproscopy tables" is also a case in point.

There is no Quality Assurance system in place and therefore no norms or bench-marks for quality; no standardization of procedures etc. This leads to arbitrary changes, e.g., change from a double puncture to a single puncture laproscopy that did not take into account the field level problems associated with the procedure. All changes in the procedure, equipment specifications, new techniques etc. should go through a specified evaluation process before being accepted for implementation.

An important indicator of quality is the number and cause of maternal and infant deaths. Periodic auditing will help in improving quality and instituting preventive strategies.

Poor quality of care and client satisfaction in the RCH services is reflected in lower levels of client satisfaction, a poor image and general distrust of public sector system. This in turn results in weak commitment among the RCH staff.

Several Indian studies have reported that the rude behaviour of health staff has been a major reason why women have not liked or used the government health services and compelled them to go to private doctors.

Government health functionaries usually blame the lack of equipment and supplies for the poor quality of their services. Ramasundaram (1994) has however observed that even when equipment and supplies were made available, clients continued to receive poor quality of care. He attributed this to the attitudes of health workers, who showed little respect for clients, particularly if they were poor, illiterate or from lower social strata. Some health workers even believed that because the government provided free services and also gave cash incentives for sterilization operations, the clients had no right to demand good-quality services.

Corruption - A major barrier to quality care for the poor

People are not aware of their rights to health care and the facilities that are available. Though the services are free at the Government health care facilities, several studies have proved that corruption at many levels ensures that unaccounted charges are collected even from the poorest.

In a study by Jagadish C. Bhatia (1995) on the "Constraints to service quality in Rural Karnataka", all categories or workers have cited the issue of widespread corruption during the in depth interviews and focus group discussions. The Auxiliary Nurse Midwives (ANMs) complained that their bills, arrears, and other claims were inordinately delayed unless they agreed to pay a portion of their claims as "speed money".

Following are some highlights of the comments made by an LHV with more than two decades of work experience which is a telling tale of how deep rooted corruption is in the area of public service delivery:

"In the past, although we had much less manpower, logistic support, service prerequisites, housing etc., you will be surprised to learn that we used to work well. However over time the working standards deteriorated with the gradual erosion in the ethical standards of immediate supervisors and higher officials, which paved the way to the institutionalization of corruption in the health department. Today, to be corrupt is no longer considered

reprehensible. Drugs and equipment in the health facilities are misused without any hesitation. The doctors are interested only in private practice and amassing wealth”.

A World Bank initiated study in 1999 confirms free access to quality health care services at the IPP health centers, but not in the maternity homes being run by BMP. None of the services like MTP, sterilization, delivery were being provided free of cost and an “informal / unofficial user fee” (= bribe) was demanded in almost all cases. The desperate condition of the patient and the their families in a medical emergency is being exploited to the maximum.

A study by the Public Affairs Centre published in May 1998 on “Bangalore Hospitals and the Urban Poor- A Report Card “ revealed that:

- About 89% of the respondents interacting with BMP maternity homes admitted having paid bribes (speed money) to access better services.
- There are distinct differences in service quality between maternity homes and IPP health centres. While maternity homes do not score that well on cleanliness and hygiene, IPP health centres do. Basic medicines that are to be given free are not being given to a large proportion of poor patients at Maternity homes, while at IPP HCs more people get free medicines.
- The differences in quality of service are also indicative of poor discipline and responsiveness among the staff at maternity homes
- The practice of corruption is far more entrenched in maternity homes than in IPP health centres. Bribes are being demanded and paid for almost every service being provided at maternity homes.
- The staff are not ready to accept the prevalence of corruption leave alone trying to tackle it.

Distortions in Primary Health Care

There is lack of integration of the RCH programme into the general Health System. This emphasis as a separate vertical program results in ignoring the basic health aspects and diseases not addressed under the RCH program, including menopausal and other gynecologic problems, cancers etc.

Community participation and ownership of the programme by the community is lacking. This can be seen by the fact that even the Sub Centre plans are still made on the basis of the previous year's “targets”. A household survey and assessing “Unmet Needs” is not being done.

Partnerships with the NGOs and the private health sector are not adequately explored

Lack of Equity

a. Regional inequalities:

The poor quality of services is worse in the Northern districts and gets compounded by poor social structures, poverty and low literacy levels. All this leads to even lower access to whatever services are available.

b. Gender inequality:

The programme is insensitive to the gender inequality factor and therefore does not address it adequately.

When women are not allowed to make choices about their life, they are hardly in a position to make choices about contraceptive methods, ‘negotiate’ with their partners to use condoms or to respect their reproductive rights, their feelings and their emotional needs.

- **Male Responsibility:** The issue of male responsibility in matters of contraception, STD, AIDS; sexual violence, growth of red light areas, trafficking of women, spread of pornographic literature and blue films, growing market for aphrodisiacs and male potency drugs, need to be addressed. The role of male sexual behavior, gender relations, sexual and gender responsibility, role of the 'Y' chromosome from the male partner in determining the gender of the child, etc. must also be addressed.
- In the name of empowerment, contraceptive responsibilities have been transferred to the women. In health programmes and policy planning, it should be ensured that pregnancy is made a matter of male concern also.

Gender sensitive indicators

The indicators used to assess RCH programmes focus on general reproductive health aspects. They are not useful to measure the impacts of the gender sensitive policy on the field level situation. So there is a need to develop gender sensitive indicators to specifically measure the integration and outcome of gender sensitivity at the programme level and subsequent changes at the community level.

Gender sensitive indicators that may be used to assess RCH programmes are:

- Average attendance of men and women at meetings with the community.
- Number/percentage of couples who participate equally in decisions regarding reproductive issues and sexuality.
- Number of women who negotiate with their partners for the use of condoms.
- Number/percentage of men using condoms.
- Number/percentage of the total pregnant women who report that the present pregnancy was not planned/unwanted and who are able to take a decision themselves to undergo MTP.
- Number/percentage of men who think that use of family planning method is the wife's responsibility.
- Number/percentage of sterilizations that are vasectomies.

Men have to be sensitized to this gender perspective and influenced to assume responsibility for the consequences of their sexual behaviour and reproductive roles; and share household work and child rearing. They have to actively promote gender equity, girl's education and women's empowerment within their families, communities and work places.

Gender perspective of health care providers

The work of health care providers is divided along gender lines and tends to be inequitable for female providers. The ANMs are completely responsible for MCH, family planning and outreach work, while male health providers focus on prevention and control of infectious diseases. This makes male health care workers insensitive to reproductive health issues.

ANMs are overburdened; lack logistical and administrative support, travel long distances alone at odd hours of the day for home visits, risking their own personnel safety and security; and receive abusive and biased treatment by virtue of working at the bottom rung of a male dominated hierarchy. Lady Health Visitors do their own work as well as that of the male workers.

Recommendations

Quality of service

- The general quality of service should be improved; a Quality Assurance programme should be developed and implemented.
- Any changes in the procedure, equipment specifications, new techniques etc. should go through a specified evaluation process before being accepted for implementation.
- The patient's comfort and dignity are of first consideration. So the tilted laparoscopy tables and other such inconsiderate methodology should not be used.
- The attitude of doctors and other staff should be positive and helpful. This can be ensured through periodic internal audits, patient satisfaction studies and accreditation system with an external audit.
- Periodic auditing of maternal and infant deaths should be implemented to institute preventive strategies.
- While tobacco use and passive smoking, adversely affect everyone, the health hazards on the fetus and newborn should be recognised. Every effort should be made to check this, including Health Education; enforcement of Anti- Tobacco legislation; social boycott of tobacco use etc.
- Referral for high-risk pregnancies to the FRUs, should include facilities for transport; 24-hour delivery and emergency obstetric services should be ensured at FRUs.
- Sterilizations, MTPs etc should be carried out only at FRUs (Fixed-Day strategy) and not at camps.
- Availability of safe abortion (MTP) services for married and unmarried women should be ensured.
- A female relative / attendant of the patient may be allowed to be present during delivery. This will improve accountability and decrease corruption.

Infrastructure-Staff

- The system of deliveries by Dais should be supported, with enhanced training.
- To solve the problem of safety and timely attendance of ANMs: as far as possible, ANMs should be posted in their home villages; given loan facility to buy a two-wheeler. Their workload needs to be rationalized- less paper work and better use of their expertise and talent
- Training of birth attendants: Initial as well as periodic reorientation training for all birth attendants to ensure quality should be implemented. There should be periodic evaluation and up-gradation of the training courses.
- Ensuring availability of trained staff: Government may consider introducing approved, training courses to provide services in the absence of a Medical Officer, such as:
 - a. Nurse-Obstetrician Practitioner at the PHC level
 - b. Short-term (6m to 1yr) training in anaesthesia for Medical Officers at the CHC level.
(The details of the course, feasibility etc. should be worked out by an expert team.)
- A second village level functionary to take care of the newborn, may be considered.
- Posting two Medical Officers at PHCs one of whom is a Lady MO will improve the quality of services. The services of Lady Medical Officers should be made available at all levels, if necessary with support from the private sector, especially in North Karnataka districts.

The following should be made available at the field level:

- *Disposable delivery kits with good quality cost effective components - with the expectant mothers.*
- *Subsidised menstrual cloth /pads may be supplied to the poor. This will promote personal hygiene and should be supported with awareness programmes to ensure correct usage. Long-term sustainability, familiarity & preference of use and biodegradability etc. should be considered before implementation.*
- *Increased supply of condoms to meet the need for spacing as well as for prevention of STD & HIV/AIDS.*

To promote gender equity of RCH programme:

- *Gender sensitive indicators as given earlier, should be used to assess and improve equity.*
- *Privacy during examination and availability of clean toilets should be ensured.*
- *Male Health Workers should be given adequate training and skills to tackle gender issues and to ensure male participation through individual counseling as well as community education programmes.*
- *Gender inequalities among male and female health workers must be reduced by ensuring equal representation of men and women in managerial and supervisory roles, equal distribution of work and responsibilities, equity in pay etc.*

(Specific recommendations with regard to family planning services are elaborated in the chapter on Population Stabilization).

9. POPULATION STABILIZATION

*That action is best which procures the
greatest happiness for the greatest numbers.*

- Francis Hutcheson

In the recently announced National Population Policy 2000, it is explicitly stated that the stabilising of population is an essential requirement for promoting sustainable development with equitable distribution but this has to be within the context of enhancing outreach of primary education, enhancing essential amenities such as sanitation, drinking water, health care, employment and empowerment of women. This policy would be implemented through the States and it would, therefore, be necessary to consider the mechanisms of doing so and the elements that are of particular importance to Karnataka. In other words, it would be necessary to consider the formulation of a population policy specific to this State.

The Population Policy will be an important and integral part of the comprehensive State Health Policy. The Government of India has separate policies for health and population. The advantage in the formulation of separate policies would be that the emphasis on the different elements will not be diluted. But there is greater merit in having an integrated comprehensive policy. There have to be close linkages between health services and population issues. It is recognised that the implementation of the population policy would not be the sole responsibility of the Health and Family Welfare Department. Considerable inter-sectoral co-ordination is necessary.

The demographic goals for Karnataka, taking into consideration current levels of the indicators have been estimated as follows ¹:

Year	Goals					Population in 000s
	Total Fertility Rate	Crude Birth Rate	Crude Death Rate	Infant Mortality Rate	Couple Protection Rate	
1998	2.5	22	8.0	58	58	50983
2000	2.4	21	8.0	53	60	52091
2005	2.1	19	7.5	42	64	55425
2011	1.8	17	7.5	30	69	59815
2016	1.6	14	7.0	30	75	63007
2031	-	-	-	-	-	69836

¹ From a paper "Perspective Demographic Goals for Karnataka" by Bhattacharjee, Prakasham and Gopal, Population Centre and Directorate of Health and Family Welfare Services, Bangalore 1999. These differ slightly from the assumptions and estimations of the Registrar General, India.

The population replacement level is expected to be achieved when the TFR is 2.1. It is estimated that Karnataka would have to achieve this TFR by 2005, in which case the other parameters would have to be at the levels indicated in the table above. Once the TFR of 2.1 is achieved, the rate of growth of population would decline over time till the population stabilizes. In the State, the population is likely to stabilize at 69.8 million in 2031.

It would be noticed that the parameters in 1998 are very close to those required to achieve a TFR of 2.1 by 2005 in the State. It would seem well within possibility to achieve TFR of 2.1 by 2005 provided that there is no slowing down in the family planning efforts and that a conscious plan is adopted for achieving this goal. In this context, it is clear that a uniform approach all over the State would seem inappropriate at this point of time when the State is poised to achieve a TFR of 2.1. The elements of the services provided to achieve this demographic goal would have to be tailored to meet the specific requirements of a sub-region. Three important factors that influence fertility are (a) the age at marriage of girls as reflected in proportion of girls married below 18 years, (b) birth order 3 and above which would indicate need for limitation of family size (d) proportion of safe deliveries and (d) unmet demand for family planning services.

The Table 9.1 indicates the districts ranked by the first three factors. The districts in which the services would

Table 9.1 : Marriage and Child bearing

	% girls married below 18 years		Birth order 3 and above		% of safe delivery
D. Kannada	4.50	Bangalore (R)	16.40	Gulbarga	47.70
Udupi	4.50	Kodagu	18.80	Koppal	48.00
U. Kannada	15.00	Hassan	19.70	Raichur	48.00
Shimoga	16.50	C.R. Nagar	23.90	Bijapur	50.10
Bangalore (R)	21.50	Mysore	23.90	Bidar	52.50
Kodagu	22.00	Bangalore (U)	26.10	Chitradurga	53.80
Tumkur	27.10	Chikkamagalur	26.10	Davangere	53.80
Chitradurga	30.50	Mandya	26.10	Bellary	54.00
Davangere	30.50	U. Kannada	27.20	Kolar	59.20
Kolar	33.50	Tumkur	27.30	Mandya	60.40
Dharwad	36.50	Kolar	29.70	Tumkur	63.50
Gadag	36.50	D. Kannada	32.00	Dharwad	65.30
Haveri	36.50	Udupi	32.00	Gadag	65.30
Bangalore (U)	37.00	Chitradurga	34.40	Haveri	65.30
Chikkamagalur	37.00	Davangere	34.40	Belgaum	68.60
Mandya	37.00	Belgaum	36.70	C.R. Nagar	69.70
Bellary	44.20	Dharwad	37.40	Hassan	69.70
Gulbarga	47.70	Gadag	37.40	Mysore	69.70
C.R. Nagar	47.90	Haveri	37.40	Chikkamagalur	78.00
Mysore	47.90	Bagalkot	43.00	Bangalore (R)	79.10
Belgaum	55.80	Bijapur	43.00	Kodagu	79.40
Koppal	57.10	Bellary	48.60	Shimoga	83.00
Raichur	57.10	Koppal	52.80	U. Kannada	86.10
Bagalkot	64.80	Raichur	52.80	Bangalore (U)	90.60
Bijapur	64.80	Bidar	52.90	D. Kannada	91.50
Bidar	67.60	Gulbarga	53.70	Udupi	91.50
Karnataka	39.45	Karnataka	34.96	Karnataka	70.15

Source : Letter D.O. No.27 / 2000 NCP dated 21 December 2000 from Member Secretary, National Population Commission, Government of India, to Chief Secretaries

have to concentrate on these issues are clearly distinguishable. It is in these districts that the family planning services would need to be enhanced both in reach and quality. The recent NFHS – 2 indicates that there is an unmet need for family planning services in the State of 11.5 per cent. It is this unmet need that would have to be serviced effectively and efficiently, even while maintaining and improving the current level of services in all the districts.

The achievement of a TFR of 2.1, as a consequence of achievement of the attendant parameters, would have to form the demographic core of the population policy of the State. However, the policy would have to recognise and give equal importance to the socio - economic factors that influence decisions on family size and adoption of family planning. These include elements in both the health and social sectors.

Elements within the health sector

The family planning services would have to be based on the premise that the services that the people want should be available, that they have options of choice of methods based on information and advice, and that quality is assured. The health services would, in particular, have to improve, enhance and efficiently implement programmes relating to RCH and family planning. Priority would have to be given to meeting the unmet needs for family planning services.

Intensive IEC efforts would be necessary regarding the advantages of postponing the second child and limiting the children to two. The fact that the male partner is the main determinant of the sex of the child would need emphasis. The emphasis on spacing methods would need to be intensive. This would have to be accompanied with prompt availability of services.

The family planning programme must maintain gender equity in evoking participation. Enhancing male participation in the family planning programme is vital. Such participation should be ensured through specially directed IEC efforts. Previously announced fixed days could be designated in CHCs and Taluk Hospitals for vasectomies, to enhance such participation.

Accessibility and quality of services

The acceptance of family planning is dependent on the quality and accessibility of reliable services. The services offered should be available throughout the year. The quality and availability in terms of choice of safe and effective family planning services must be improved and maintained. The choice of temporary or permanent methods should be available and there should be no compulsion. In particular, the quality of services relating to tubectomy and laparoscopy would have to be assured. The health services would have to continuously monitor these aspects if the demographic goals are to be attained and if family planning acceptance has to be enhanced.

Acceptance should be voluntary and there should be no compulsion with regard to either the adoption of family planning or any particular method. The services should motivate acceptance through IEC, so that acceptance of family planning is based on informed choice. In particular, there should be no concerted efforts that seek to pressurize women to adopt such measures through “camp” or “pulse” approach.

There should be access to safe abortion (MTP) services for both married and unmarried women, with rights of privacy.

There has to be regular and effective follow up of acceptors after they adopt any of the family planning methods to ensure that complications, if any are attended to expeditiously. Such follow up would also encourage the increasing acceptance of family planning.

New technology

New technology should be adopted only after very careful evaluation, including public reactions to its use. Such new technology should be adopted only after due consideration of the ethical aspects, safety issues and cost effectiveness.

The focus of IEC would have to shift to the younger age groups, particularly the adolescents. Even with the implementation of the law relating to minimum age at marriage, there are likely to be cases of marriages in which the partners are below the legal age. In such cases, from the point of view of the health of the mother and child, counseling for family planning should be available.

Elements within the social sector

Conscious efforts for inducing a change in social attitudes regarding enhancing the age at marriage must be made. The role of women's groups and of the panchayat bodies in this effort is most important. In this context, the introduction of legislation for registration of all marriages could be considered. The strict enforcement of the law that prohibits marriages below specified ages for boys and girls would go a long way, along with other efforts. Registration of marriages would also assist in enhancing outreach services of family planning.

There would be need for a strong IEC programme regarding the health hazards and social ills of early marriages and the need to raise the age at marriage. The basics of health and reproductive behaviour would have to be introduced in school programmes – in particular for adolescents as prospective parents.

With near replacement levels likely to be achieved with the enhanced efforts suggested, it is important that the population policy is centred around the perceptions of the community regarding this issue. This would imply that the community, through its representatives, particularly women, is fully involved in both consultative and operational terms. There would have to be facility for informed choices, with the health aspects receiving the greater emphasis.

Elements of a population policy:

The population policy for the State would have to include all parameters that impinge on population dimensions, including health and social issues. The main elements of the policy would include the following:

1. Recognition of regional disparities and need for regional / district focus with necessary variations in emphasis depending on such disparities. The parameters would include those that relate to health, RCH, the education and social sectors. Such an analysis would guide decisions regarding location and scale of health services;
2. Based on the evaluation of the current status of the family planning programme and taking into consideration the parameters indicated above, prioritization of the districts for enhancement of the services and more intensive action on related measures;
3. Recognition that population issues are an important part of the health package would include encouraging spacing methods, offering alternatives, combined with RCH, while recognizing the need for continued emphasis on family planning;
4. Enhancement of availability, accessibility, quality of services;
5. Enhancement of male participation in acceptance of family welfare through intensive IEC and also by designating fixed days in CHCs and Taluk Hospitals for vasectomies;

6. Enhancement of services to meet the unmet demand for family planning services, with a strong IEC component regarding the advantages of postponing the second child;
7. Assignment of a clear role to the Panchayat institutions;
8. Developing a mechanism for ensuring coordination in implementation of schemes by departments in closely associated sectors such as education, social welfare, nutrition and the like;
9. Recognition of the importance of social parameters such as age at marriage for both girls and boys and educational levels for enhancement of health status of the family;
10. Introduction of the basics of health and reproductive behaviour in school programmes – in particular for adolescents as prospective parents.

Implementation

It would be relevant to note that even after the achievement of replacement level of TFR 2.1, the family planning efforts should not de-emphasized. It would be important that these efforts are maintained at the enhanced levels suggested herein even thereafter for obvious reasons, but the emphasis would change over time to social and health issues, with particular emphasis on the latter.

It is recommended that an Expert Committee, including non-official experts, be constituted by Government to look into the Population Policy. The policy could also suggest the administrative mechanisms for coordination between associated departments and for high level monitoring, so as to achieve the parameters as soon as possible.

The draft Population Policy should be widely publicised for eliciting public and professional opinions. The Policy would take into account the projections till 2011 which would indicate the needs in terms of organisation, staff and training needs, recruitment procedures, equipment, and enhancement of RCH particularly with regard to IMR, neo-natal deaths and female mortality.

Many social and development issues are associated with population issues. It would be desirable that these issues are considered together. At the level of Government, therefore, the following mechanisms for coordination are suggested:

1. A single Committee on Social and Population Issues could be constituted at the official level with the Development Commissioner / Chief Secretary as Chairperson. Membership could include the Permanent Secretaries of Finance, Health, Education, Social Welfare, Women and Child Development, with others being co-opted, if necessary. This Committee could consider all coordination issues between the various social sectors, including health; and
2. A Commission on Population and Social Development at the Cabinet level could be constituted for consideration of all coordination, policy issues and covering all Departments relating to social sectors of development, including health.

It is suggested that the Expert Committee be constituted very early so that the population policy is adopted as early as possible and the operational efforts and organizational arrangements that the policy may recommend are commenced urgently.

Recommendations

- The unmet need for family planning services should be met, with options of choice and assured quality;
- Information, education and communication activities should be enhanced to convey messages of the advantages of postponing the second child, of a two child norm, and of the health and familial advantages of spacing births;
- Gender equity must be maintained in evoking acceptance of family planning. Male participation in the programme would have to be increased through special efforts, including IEC activities;
- The quality and availability in terms of choice of safe and effective family planning services, both temporary and permanent, must be improved, to enhance voluntary participation;
- There has to be regular and effective follow up of acceptors after they adopt any of the family planning methods to ensure that complications, if any are attended to expeditiously. Such follow up would also encourage the increasing acceptance of family planning
- There should be no element of compulsion or pressure, particularly through camps or “pulse approach”. The services should be such that their quality and availability, with regularity and at all times, with choice encourages voluntary adoption of family planning;
- New family planning technology should be adopted only after careful consideration of the ethical aspects of use of such technology, safety issues and cost effectiveness;
- Safe abortion (MTP) services should be available for married and unmarried women, with right to privacy;
- The focus of IEC and of counseling would have to shift to younger age groups, particularly of adolescents;
- Even with the implementation of the law relating to minimum age at marriage, there are likely to be cases of marriages in which the partners are below the legal age. In such cases, from the point of view of the health of the mother and child, counseling for family planning should be available.
- The introduction of the legal requirement of registration of marriages for all is necessary. This would enable the stricter application of the law relating to restriction of age at marriage and assist in organizing out-reach services;
- IEC programmes should emphasize the health hazards and social ills of early marriages and the need to raise the age at marriage;
- The basics of responsible reproductive behaviour should be introduced in school programmes for adolescents;
- The community, particularly women’s groups, should be closely associated, in consultative and operational terms, with family planning programmes to reflect the perceptions and needs of the local community
- The Population Policy for the State as part of Integrated Health Policy should be drafted. The draft policy would have to be widely publicized for public awareness and response, before it is finalized;
- Districts may be prioritized on the basis of evaluation of the current status of the family planning services available and related social criteria, for enhancing the scale of the programme;
- For ensuring inter-sectoral coordination and monitoring of the programmes relating to family planning and related sectors, a Committee on Social and Population Issues may be established at the official level, while at the Cabinet level a Commission on Social and Population may be established.

10. FOCUS ON SPECIAL GROUPS

10.1 PERSONS WITH DISABILITIES

Disabilities rob the basic rights of an individual to physical, mental, spiritual and social well-being. A person with disability is one who has a functional limitation or an activity restriction. Disabilities include among others, locomotor disability, visual impairment; hearing and speech impairment; mental illness, mental retardation, multiple disability etc; learning disabilities, usually neglected, are seen in an estimated 5-10% of school children.

Locomotor disability accounts for nearly 60% of physical disabilities (excluding mental retardation and illness).

The rehabilitative services include corrective surgery, physiotherapy, occupational therapy and fitment of aids and appliances. The largest cause of visual impairment is cataract, which is curable through surgery and use of intraocular lens. Rehabilitation of persons with communication disability (speech and hearing) needs various procedures like use of hearing aids, surgery, etc. Mental retardation and mental illness are widely prevalent. Multiple disabilities are more difficult to tackle; the most common occurrence is in persons with cerebral palsy.

It is estimated that 3 to 4% of the population in India have some form of moderate to severe disability. The 1991 survey of the Government of Karnataka showed a lower figure of 1% (3,55,819 persons with disability). Action Aid surveys showed a rate of 2 to 3%. These figures may have included only the severe cases, those that the families and community perceived as being disabled and needing interventions. (They did not include mental illness). 76% of the disabled are in the rural areas and 24% in urban areas. Males form 58% of the disabled population. There are regional variations in the numbers as well as the types of disability. The 2001 census includes enumeration of people with disability. There is need for Karnataka – Specific epidemiological studies and a registry, disaggregated with respect to rural – urban, gender, age and region (districts).

A recent (2000) Survey of Bangalore City has shown the following distribution of persons with disabilities.

Distribution of disability groups (Bangalore)	
Disability	Percentage
Locomotor & poliomyelitis	32.5
Others	16.0
Learning	6.5
Epilepsy	4.5
Speech and hearing	9.5
Visual	4.0
Multiple	27.0
Total	100.0

(The mentally ill was not included in the survey; epilepsy was included.)

Age distribution of the above groups:

Age in years	Percentage
1 - 5	17.5
5 - 10	26.5
11 - 15	23.5
16 - 25	17.5
26 - 55	14.5
> 55	0.5
Total	100.0

Gender distribution

Males	52.5
Females	47.5
Total	100.0

Nearly 10% of disabilities in developing countries are caused by conditions, which are **preventable**. Second-degree consanguinity marriages can lead to a high percentage of cases of disability; pre-marital counseling can help. Prevention of brain injury by use of helmets by two wheeler users is well documented. 60% of deafness is due to otitis media, which is easily treatable. 2

Globally, programs for the Persons With Disability, which were earlier institution based and expensive, have now become **Community Based Rehabilitation (CBR)**.

“Community Based Rehabilitation is a strategy within community development for the rehabilitation, equalisation and social integration of all people with disabilities. CBR is implemented through the combined efforts of disabled people themselves, their families and communities and the appropriate health, education, vocational and social services.” – ILO, WHO, UNESCO, 1994, The Joint Declaration, Geneva.

CBR seeks to promote the principles of universal coverage of services for Persons with Disability, at a cost that is affordable along with the promotion of integration, active involvement of Persons with Disability, their families and communities in the process. It seeks to enable persons with disabilities to become productive and contributing members of society, thereby reducing the burden of families, communities and nations with fragile economies.

Multi-sectoral collaboration between health, education, labour, vocational training, housing, welfare, sports and agriculture, NGOs, Disabled Peoples Organizations (DPOs) and religious leaders within the community is imperative. **The interventions to achieve this include** prevention services; early detection and stimulation; discussing the child's capacities and problems and training the mother on how to stimulate the child; inclusive education; ways to integrate the persons with disability into daily activities of home life; self employment and income generation activities; formation and support of self help groups of disabled persons, who help in identification of other disabled, training of parents of the disabled, formation of income generating co-operatives, etc.

The Government of India launched 11 District Rehabilitation Centres, one of which is in Talakadu, Mysore District. In Karnataka, the Directorate of Welfare of the Disabled is part of the department of Women and Child Development.

The health care professionals and workers can play an important role in the prevention, early detection, intervention including corrective surgery and physiotherapy; immunisation, vitamin A, and better nutrition can prevent many disabilities.]

× [The other concerns include:

- The data in the areas of identification, classification, records of progress and evaluation are not comprehensive and complete. The recording systems vary widely, thereby making comparison difficult.
- There is need for change in the attitude of people with disabilities towards themselves and the attitude of other people to people with disabilities.
- Handicaps, such as barriers in access to building and transport vehicles, must be avoided.
- Community Based Rehabilitation methodology is still not implemented adequately; rehabilitation measures are still institution oriented.
- Most of the programs are carried out by NGOs who tend to be urban-based and cater to single disabilities.
- Networking is unsatisfactory.
- Identification of persons with learning disability, severe emotional problems and hyperactivity is not satisfactory.
- Availability of trained manpower for Community Based Rehabilitation is low.
- Existing training curricula and programs are biased towards institution based programs and are not standardised.
- The latest developments in Community Based Rehabilitation are not available to people at the grass roots level.
- Technical aids in rehabilitation are often not appropriate to Indian conditions and needs, particularly the rural.
- There is a need for co-ordination of activities of health, education, vocational training and welfare sectors.]

[Inclusive Education

Community Based Rehabilitation and inclusive education complement each other to enrich the lives of all children. CBR implies the full participation of children with disabilities and their families within the community. The attendance of children with disabilities into their regular neighbourhood schools is a natural extension of this inclusion. Separation from regular schooling (as by special schools, disability wise) contributes to negative attitudes in society. It perpetuates segregation.]

7 [Legislation

The "Persons with Disabilities Act" and "the Rehabilitation Council of India Act" are in force but not implemented effectively. Jobs are reserved for persons with disabilities but these are not filled.

Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995:

According to this Act, every State Government shall constitute a **State Co-ordination Committee** to serve as

the State focal point on disability matters and facilitate the continuous evolution of a comprehensive policy towards solving the problems faced by persons with disabilities. The specific functions of the co-ordination committee are also spelt out. These include,

- review and co-ordination of the action of all Governmental and non-governmental organisations dealing with matters relating to persons with disabilities;
- develop a State policy to address issues faced by persons with disabilities;
- advise the State Government on the formulation of policies, programmes, legislation and projects with respect to disability;
- ensure barrier free environment in public places, work places, public utilities, schools and other institutions; and;
- monitor and evaluate the impact of policies and programmes designed for achieving equality and full participation of persons with disabilities.

The Act asks the Governments and local authorities to,

- undertake surveys, investigations and research concerning the cause of occurrence of disabilities;
- promote various methods of preventing disabilities;
- screen all children at least once in a year to identify “at risk” cases;
- provide facilities for training to staff at the primary health centres;
- sponsor awareness campaigns and disseminate information for general hygiene, health and sanitation;
- take measures for pre-natal, prenatal and natal care of mother and child;
- educate the public through pre-schools, schools, primary health centres, village level workers and anganwadi workers;
- create awareness amongst the masses through television, radio and other mass media on the causes of disabilities and the preventive measures to be adopted.

The Act provides for education, employment, affirmative action, non-discrimination, research and manpower development for persons with disabilities.] x

[A recent plan for Community Based Rehabilitation Programme has the following objectives:

- Make all basic rehabilitation services available at the community level.
- Develop equal opportunities in all health, education, social welfare, rural development and other programmes.
- Increase participation of people with disabilities in community life.
- Develop appropriate technology to enhance participation of people with disability in mainstream programmes.
- Protect the rights of people with disabilities.
- Promote empowerment of people with disabilities.
- Remove physical, psychological and social barriers.
- Enable persons with disabilities to be productive members of the society through gainful employment.
- Have inclusive education for children with disabilities, to the extent possible.
- In the case of persons with profound disabilities, have special schools, hostels and other arrangements so as to promote independent living.

The plan envisages having

- Local facilitator at the Gram Panchayat or equivalent level in urban areas;
- Multipurpose rehabilitation worker at Taluk level;
- District Technical rehabilitation coordinator;
- State level Department of Disabled Welfare.

There will be inter-departmental co-ordination, education, women and child welfare, health, rural development, social welfare and labour. It is proposed to have District CBR Societies, registered under Karnataka State Trusts / Societies Registration Act. }^{*}

Recommendations

- *Establish the role of the Health department in Disability Prevention, Early detection, Intervention, corrective surgery and physiotherapy. Sensitise health-care workers on identification, classification, records of progress and evaluation, referral and home-based stimulation training. Staff from Leprosy control programs may be trained first.*
- *Utilise Media to create awareness and training of parents and other caregivers on specific disabilities.*
- *Shift from institutional approach to a Community Based Rehabilitation-home-(parent) based approach; and from single to a multi-disability approach.*
- *Networking initiatives – Get all people, Government as well as NGOs, from all sectors to meet at a common platform and plan out strategies.*
- *Have an orthotic and prosthetic centre at every district hospital (as in Tamil Nadu).*
- *Develop and implement a policy of inclusive education. Change teacher training curricula, physical environment of school and learning materials.*
- *Train teachers for early detection and management of learning difficulties.*
- *Make the wearing of helmets by two-wheeler users mandatory.*
- *Ensure implementation of the provisions in the “Persons with Disabilities Act.”*
- *Include evaluation and management of speech and hearing and other impairments in school health programmes.*
- *Make provision for the manufacture, distribution and repair and maintenance of aids and appliances.*
- *Ensure access to all health care institutions and other buildings, transport, water supply, sanitation etc., by incorporating necessary provisions in the statutes, rules, etc.*
- *Implement the provisions of the existing legislation, including Persons with Disabilities Act, 1995 with respect to protection of the rights of persons with disabilities.*
- *Ensure equal opportunities in employment and training for persons with disabilities, by enforcing current legislation; enhance the provision for training and employment.*
- *Health department to monitor the effectiveness of corrective surgery, aids and appliances.*
- *Support the family and community financially and to set up family based and self-employed petty businesses near their homes.*
- *Provide emotional and social support to care givers who serve persons with severe and multiple-impairments.*

10.2 HEALTH OF THE TRIBAL PEOPLE

The tribals constitute 8% of India's total population and form 4.26% of the population in Karnataka (1991). The tribal community here has been marginalized for years and their identity has changed from self-reliant tribals to rural poor. The tribals are exposed to the fierce competition that characterises the world around them. Relocation from their forest habitats due to National Parks and Wild life sanctuaries and displacement due to dams (Kabini dam) have impoverished the tribals.

Health Infrastructure and Human Resources in tribal areas

An accurate and reliable baseline data on the health infrastructure, human resources and health status of the tribals in Karnataka is not available. The health infrastructure in tribal areas is extremely poor. As per the 1991 census only 54.8% of the villages in ITDP (Integrated Tribal Development Programme) i.e., Mysore, Chikamagalur, Kodagu and Dakshina Kannada had some medical facilities. The average distance between the village and medical facility was about 8 kms. Only 8% of the total settlement had an allopathic doctor. The visits by the health workers were grossly inadequate. Only about 33% of the settlements received weekly visits, about 17% received fortnightly visits and 27% received monthly visits. 11.2% of all tribal settlements are non motorable. The Scheduled Tribes account for 6% of inpatients and 4% of outpatients treated in government referral hospitals (CESCON, 1997).

Priority should be given for construction of Primary Health Centres and Subcentres equipped with essential diagnostic facilities, adequate funds, drugs and facilities for treatment and referral support. The norms for PHCs and subcentres in tribal areas should be based on geographical and population basis, and they should be flexible. Proper functioning of these centres can be assured through appointment of local tribal staff and an inbuilt monitoring and evaluation system. Tribal girls should be selected and given appropriate training including traditional medicine. They should be appointed as tribal ANMs and posted in tribal subcentres. Qualification criteria for ANMs in tribal areas must be relaxed and additional incentives should be given to her. Appointment of staff who is not accustomed to tribal tradition and culture is one of the main reasons for non-availability of staff in tribal areas.

Health status of the tribals

Crude Birth Rate in the ST population was 26 per 1000 population. The ANC registration among women was 74%. 57% of the children had received all the three doses of DPT and oral polio vaccines. The extent of immunisation against measles was only 27%. Average household size is 4.55 with a highest of 4.92 among the Hasaluru. Tribals who still have access to forest resources have retained their traditional health care system better than others.

Specific Health Problems

Diseases like genetic disorders and deficiency diseases that are specific in tribal areas have not been given enough importance. Diseases like G6PD Deficiency and Sickle Cell Anaemia (prevalence of 20%) specific to tribals should be given special importance with adequate funds and expertise, for their treatment, research and rehabilitation. Malaria, Tuberculosis and STDs, which are endemic in some tribal areas need special attention and specific intervention.

Mobile Health Units

The Mobile Health Units should be made fully functional by filling up the vacant posts of doctors and Paramedical workers, repairing vehicles or providing new vehicle, providing additional POL and medicines.

Referral Services

Referral services in tribal areas are neglected. Secondary and tertiary care, transport facilities for emergency services and obstetric care are essential. Community financing for emergency transport and referrals should be promoted in tribal areas.

Traditional healing systems

Traditional healing systems must be encouraged and documented in tribal areas and there should be integration of Allopathic medicine with the Traditional systems. Promotion of herbal gardens in tribal areas is essential. A **Three-Tier system** consisting of the traditional healer, health worker and the medical officer is ideal. Traditional Tribal Dais should be trained and they should assist the ANMs. ISM&H could assist in promoting the traditional medicine in tribal areas.

Nutrition

The tribals have been denied the access to Minor Forest Produce (MFP) and hence their nutritional status is on the decline. The tribals have no landholding and the Public Distribution System (PDS) does not supply adequate quantities of nutritious food. The distribution of agricultural land by ownership is 18.5%, with the highest of 45.8% among the Soligas and 7.0% among the Hasaluru.

Nutrition security through kitchen gardens and encouragement to grow nutritionally rich food crops is the need of the hour. Proper functioning of the anganwadis in tribal areas can be ensured through appointment of local tribal staff and using locally available foods. Ideally the PDS should distribute cereals like ragi, bajra, and pulses instead of polished rice and sugar.

Health Promotion

Community Participation through Participatory Rural Appraisal (PRA) techniques, microplanning, mobilisation of community resources and empowerment of the tribals for their own health is essential for achieving "Health for All". Village Health Committees should be formed in every village along with PHC level and Subcentre level committees. Street theatre, skits, songs, posters and other health education material should be culture specific, easy to comprehend and should be in the local dialect. Health promotion should be part of integrated development for the tribals.

Health Monitoring Information System (HMIS)

A HMIS of the health infrastructure, human resources, vital statistics and other health indicators specially for the tribals is essential and it should be an ongoing process.

Population stabilisation

Information on the demographic profile and fertility characteristics in tribal areas is lacking. According to the Baseline Survey of Tribal Population in Karnataka (June 1995), the General Fertility Rate of the tribals was higher than the State as a whole. It revealed that 78% of the respondents were in favour of practicing Family Planning methods. Awareness regarding temporary methods was 42% only. About 52% were not using any family planning method. The average number of living children of the sterilization acceptors was 3.0. 74% of the women were registered for ANC but most of the pregnant mothers in tribal areas are anaemic. The population of the Jenukurubas, a Primitive Tribal Group (PTG), is said to have decreased from 29,092 in 1981 to 26,608 in 1991 according to the Ministry of Tribal Affairs, Government of India! This needs to be verified and if it is true Fertility Clinics need to be established to stabilize their population.

Education

As per the 1991 census 47.95% of males and 23.57% of females belonging to the Scheduled Tribes population were literate. 32.57% of the rural ST population and 55.08% of the urban ST population were literate. These statistics indicate that literacy levels are abysmally low compared with the ideal and hence education should be given a lot of importance in the tribal areas. The curriculum should be culture specific and should be oriented towards income generating, need based, economic development programmes. Long-term investment in raising the literacy rate among the tribals will reflect in their health status.

Drinking Water and Sanitation

Drinking water and sanitation facilities in tribal areas are poor. A study revealed that only 51% of the hamlets have bore well facilities, 23.4% have open wells, 17% have tanks, 6.4% have river water and 11.3% have tap facilities. Tribal housing with adequate and acceptable drinking water and sanitation facilities and smokeless choolas should be ensured.

Voluntary Organisations

Voluntary (Not for Profit) organizations have played a crucial role in the integrated development of the tribals in our state. They have access to the remote areas where government health care system is yet to deliver its goods. Voluntary Organisations have done remarkable work for the tribals living in B.R. Hills, M.M. Hills of Chamarajnagar District, and at H.D. Kote. There should be increased collaboration between the voluntary and governmental sector. They should be involved in every programme that is planned to be implemented in the tribal areas.

Socioeconomic factors

Alienation of the tribals from their forest resources for their livelihood, exploitation by the non tribals as unorganised workers, laying down of new roads and highways, deforestation, displacement due to dams and claiming of ST status by other caste groups have resulted in the deterioration of the health status of the tribals. Uncontrolled sale of illicit liquor in the tribal areas has lead to alcoholism and related problems.

Recommendations

- *A rapid survey of the health status of the tribals should be carried out and region specific and tribe specific health plans should be made.*
- *The norms for Primary Health Centres and Subcentres in tribal areas should be based on geographical and population basis and they should be flexible.*
- *Tribal girls should be selected and trained as tribal ANMs and they should be posted in tribal subcentres. They should also be trained in traditional medicine and health practices.*
- *Traditional healing systems must be encouraged and documented in tribal areas and there should be integration of modern medicine with the Traditional systems. Promote herbal gardens in tribal areas.*
- *Genetic diseases like Sickle Cell Anaemia, G 6 PD Deficiency, which are specific to tribals should be given special importance with adequate funds and expertise, for their treatment, research and rehabilitation with the support of medical colleges.*

- *Secondary and tertiary care, transport facilities for emergency services and obstetric care are essential. Community financing for emergency transport and referrals should be promoted in tribal areas.*
- *Health education, PRA exercises and micro planning, convergent community action, training in communication skills, mobilisation of local health resources are essential.*
- *Ensure nutrition security through kitchen gardens and encouragement to grow nutritionally rich food crops. Public Distribution System should distribute cereals like ragi, bajra, oil and pulses instead of polished rice and sugar.*
- *Proper functioning of the anganwadies in tribal areas should be ensured through appointment of local tribal staff and using locally available foods.*
- *A HMIS of the health infrastructure, human resources, vital statistics and other health indicators specially for the tribals is mandatory and should be an on-going process.*
- *There should be increased collaboration between the government and the NGOs in tribal areas. The voluntary agencies must be involved in all health and development activities undertaken by the government.*
- *Tribal housing with adequate and safe drinking water and sanitation facilities, and smokeless choolas should be ensured.*
- *The Mobile Health Units in tribal areas should be made fully functional by filling up the vacant posts, providing equipment and drugs.*
- *Ban sale of liquor in tribal areas.*

10.3 THE ELDERLY

Age is a thing of mind over matter

If you don't mind it don't matter.

- Mark Twain

With improvement in preventive medicine and health care in the country, the expectation of life at birth has increased from 32 years in the forties to over 60 in the nineties. In other words, people live longer and the health of the elderly has also improved. Consequently, the numbers of the elderly, that is those 60 years and over, have been increasing. From 12 million in 1901, the number of the elderly was about 20 million by 1951 and 57 million by 1991. Population projections made by the Registrar General, India indicate that this number would be 100 million by 2016¹. The size of the aged population would have implications for most social services, including health.

In Karnataka, the number and proportion of the aged in the population in 1991 were 3,142,708 and 6.99 % respectively. The projections indicate that by 2001 the number of the aged would be 3,783,000 or 7.18 % of the population and by 2016 it would be 6,096,000 or 9.71 %. The increases are significant.

The composition of the aged and the differential characteristics between elderly men and women would influence policy prescriptions and determine the elements of measures for the care of the elderly. An analysis by broad age groups within the elderly in the State is presented below for 1991 and 2016 –

¹ The data are from two publications of the Registrar General & Census Commissioner, India. These are (i) Population Projections for India and the States 1996 – 2016 of 1996 and (b) Ageing Population of India – An analysis of the 1991 Census Data of 1999.

Age Group among the Elderly	1991 Number of elderly and proportion of the age group in total population	2016 Number of elderly and proportion of the age group in total population
60 – 64	1, 078, 000; 2.40%	2, 165, 000; 3.6%
65 – 69	798,000; 1.77 %	1, 604, 000; 2.6%
70 – 74	600,000; 1.33 %	1, 086, 000; 1.7%
75 – 79	245,000; 0.54 %	644,000; 1.0 %
80 +	371,000; 0.83 %	598,000; 1.0 %

The increase in numbers and the increasing proportions of the elderly in the total population by 2016 are noticeable.

The distribution of the elderly within themselves would also be of significance. In 1991, this distribution by broad age groups was as follows:

Age Groups	Number of elderly in the age group	Proportion of those in the age group to total elderly population in %
60 – 69	1, 929, 703	61.40
70 – 79	8, 42, 585	26.81
80 – 89	296,551	9.44
90 – 99	64,056	2.04
100 +	9813	0.91
	3,142,708	100

The proportions could be assumed as continuing till 2016. The distribution of the elderly by broad age groups would indicate that the scale and type of health services that would be necessary for the elderly cannot be of a uniform type. The health services that would be appropriate for the age groups 60 – 69 and 70 – 79 would be different from those required by the higher age groups of 80 years and above.

Every age group has its special health needs. At every stage, the need for and the type of facilities would vary in content and accessibility - whether health and medical facilities, transport or social support. It is in this context that the special needs relating to the elderly become important. However, the issues relating to the elderly would have to be viewed as concerns of the health and social welfare systems and not of the former alone. Concerns relating to the elderly would call for inter-sectoral coordination between the various agencies concerned.

Psychological, social and economic needs

Vital socio-economic and psychological changes occur as a person gets older – sometimes articulated to a point where they could create familial tensions, sometimes borne without protest and often without even realization of the changes, but nevertheless inevitable. Relationships within the family change and modern life compounds the

problem. The perceptions of cultural and behavior patterns and of life styles between generations – the generation gap – begin to manifest themselves. Adjustments are often difficult. In the urban areas, the stress of modern life styles, shortage of living space, mobility due to career advancement and the like – all of which have economic implications - have eroded the strength of the joint family system. In the rural areas social compulsions and community sympathy may be stronger and this may, to some extent temper the need for adjustment among generations within the family. However, the apparent difficulties in obtaining effective medical care and hospital services are more pronounced than in the urban areas.

The question as to how to provide for the elderly does not have a unique answer. In the Karnataka context, it would be unrealistic to prescribe state sponsored social welfare measures and monetary support systems implemented by official agencies. The tradition of family responsibility for the young and the elderly, which even while being eroded, still exists, needs to be sponsored and sustained. A social security system that is based on the family – an in-built family based system – is probably the best, the most cost effective and most psychologically satisfying. However, it is because such a system is getting eroded due to various reasons that other measures have to be devised. The alternative is action by the State and by voluntary organizations, each supporting the other, with strengthening of the family care system.

In this context, the gender issues and the economic aspects cannot be ignored. The percentage distribution of population aged 60 plus by marital status in the rural and urban areas is as follows –

	Married	Widowed
Rural:	Males	Females
	84.86 %	35.11 %
	13.00 %	63.89 %
Urban:	Males	Females
	85.69 %	36.83 %
	11.22 %	61.38 %

It would be apparent that elderly men have the support of a companion, since they tend to remarry. The proportion among the elderly of widowed men is significantly smaller than that among elderly women. The support system within the family for women tends to be weaker than that for men. Economically also, elderly men would seem to have an advantage. Among the elderly males 56.67 % continue to work as against 18.14 % among elderly women. In the rural areas, the proportion of elderly males who work is 62.43 % while that among elderly women is 21.43 %. The corresponding urban proportions are 40.01 % and 7.71 %. This would imply that in the formulation of health and social welfare measures for the elderly, special provisions would have to be built in for elderly women.

Some broad issues could be identified as arising from the aging of the population. These include

1. Health and medical issues, including the need to establish special geriatric services, which have both costs and organizational elements;
2. Social issues such as diminishing family support of the elderly;
3. Gender issues as a consequence of a larger proportion of widows;
4. Economic consequences such as:
 - a) enhanced pension payments over longer periods,

- b) a lower savings rate, with possible erosion of savings for providing care within the family,
- c) reduction in consumer expenditure on certain types of goods and services,
- d) in the long-term, a possible reduction in the availability of workers, with consequent increase of labour costs.

5. The need to restructure social services and the insurance sector to provide basic security for the elderly.

The Constitution of India, in Article 41 of the Directive Principles of State Policy, specifies that the State shall, within the limits of its economic capacity, provide for assistance to the elderly. The National Policy on Older Persons of January 1999 reflects this concern for the elderly and indicates possible action points. It mandates State support for the elderly with regard to health care, shelter and welfare. It also provides for building up a strong and vigorous voluntary initiative through Non-Governmental organizations. The National Population Policy 2000 also refers to the needs of the elderly while the Draft Health Policy of 1999 specifically includes concepts relating to geriatric care.

The issues relating to the elderly are complex since they include social welfare and cultural parameters. In dealing with these issues the approach should be to enable the elderly to lead comfortable lives with assured minimum health care, sustenance and shelter, preferably within the family system. In particular, any system that provides for care for the elderly has to recognize that elderly women are more disadvantaged than men, with discrimination being based on gender, widowhood and age as reflected by lack of utility in the household. Also, a welfare system for the elderly should permit the active and productive involvement of the elderly, to the extent possible, in economic and social activities. Elderly persons should be viewed as a resource capable of being used for special purposes and not just as consumers. As society ages, opportunities and facilities would have to be provided so as to utilize this resource.

Welfare system for the elderly

The capacity of the State to provide a fully State funded welfare system for the elderly is very limited. It would, therefore, be necessary to devise systems of care for the elderly that cater to essentials, with periodic enhancement of facilities and extent of care over time. The need for active involvement of the non-government sector would be evident. It would also be evident that such measures would have to be structured on the basis of strong family involvement in the care of the elderly.

A welfare policy for the elderly would include (a) financial measures, (b) legal measures, (c) health and medical care issues, (d) involvement of the NGOs and (e) measures for strengthening the family system of care for the elderly in the family. It would be evident that such measures fall within the purview of various administrative departments of Government. The implementation of a policy for the elderly would, therefore, call for close inter-sector coordination. It would be necessary for the Government to formulate a policy for the elderly, which would include all elements, including health. Some of the important elements that such a policy would have to include would relate to the health sector and to the social sector.

Measures within the health sector:

Issues relating to the health and medical requirements of the elderly are not distinguished in the current system of health care. It is only in the last few years that there has been recognition that these needs of the elderly require both special organizational arrangements and special professional skills and training. It is also recognized that health and medical issues of the elderly cannot be disassociated from other social welfare measures such as health insurance, subsidized costs of shelter and economic relief. Nevertheless, even as a general policy for the elderly

is being formulated and implemented, it is possible to institute certain action plans relating to the elderly in the health system.

The goal of health services to the elderly would have to be based on the general principle of all health services, namely to provide affordable services of adequate and acceptable quality as near the beneficiary as possible. While reasonable charges for services could be levied, special rates for the elderly are recommended so as to lessen the burden on the household and to induce them to seek medical attention for the elderly with no hesitation. It is in this context that schemes for health insurance become important.

The primary health care system would necessarily be the main provider of such services to the elderly, because of its reach. It would have to be strengthened and oriented for this purpose because the health and medical problems of the elderly would often be accompanied with disability, loss of some faculties and psychological problems. These problems are not always manageable at home or would require special training or orientation in those who cater to the needs of such elderly persons.

Geriatric care facilities would have to be provided at the secondary and tertiary care levels. In addition, the private health institutions should be encouraged to provide such facilities, and a per-patient payment system by Government could be considered. This would reduce the immediate investment that would, otherwise, have to be made to provide such facilities in all public health institutions.

The management of both public and private institutions would need to be sensitized to the special needs of the elderly. Single point counters to avoid multiple trips to various counters in an institution, elimination of long waits and patience in personal interaction would be some of the measures that would seem essential.

Training for care of the elderly

It would be evident that medical and para-medical personnel would need special training and orientation on two counts. The first would be an appreciation that the health and medical problems of the elderly have special elements that must be recognized and, second, that the organization of services for the elderly would need special efforts. Such training and orientation would have to be at two levels. The first would be to train the staff in all primary, secondary and tertiary care institutions on geriatric issues and care. The second would be the need to build into medical courses geriatric issues and their treatment. It is recommended that (a) in-house training in geriatric care should be instituted within the Department, (b) the associations of private institutions be requested to conduct similar courses, and (c) the content of medical courses be reviewed so as to train medical graduates to geriatric issues. It is also recommended that such courses on geriatric care be introduced in training of nurses and para-medical staff.

Measures within the social and legal framework:

The elements relating to the elderly that could be considered as falling within the social and legal framework would, among others, include the following:-

- Financial measures such as instituting health insurance schemes for the elderly. This could be introduced by the Karnataka Government Insurance Department;
- Provision of old age pensions to those below the poverty line with suitable safeguards to ensure that the right beneficiaries receive the amounts;
- Non-government organizations could be assisted in utilizing the elderly in productive activities as teachers / guards and the like and establishing of care centres. Such organizations could also be encouraged to

- establish counseling centres to advise the elderly and their families on problems relating to the former;
- Legal provisions to ensure that the family takes the responsibility of looking after the elderly could also be considered as has been attempted through the Himachal Pradesh “Maintenance of Parents and Dependents Act”, 1966. However, the difficulties in implementing social measures of this nature must be kept in mind.
- Efforts through the media to restore family values and also to indicate the measures instituted for the elderly. Creative media efforts should dispel the notion of the elderly being either of little help in the family or as a burden, especially in the case of widows. Traditional publicity modes could be inducted for this purpose.
- Panchayat institutions could be encouraged to promote the welfare of the elderly and induct them, on fixed honoraria basis, for specific work in the community.

The role of non-governmental organizations has been referred to earlier. It would be necessary to provide incentives, with due controls of inspection and monitoring, to NGOs that establish or provide facilities to the elderly such as medical treatment, in-house care, recreational facilities and the like. Such incentives could include special quotas from the public distribution system, exemptions from stamp duty on purchases of land, lower rates of property tax and the like. These elements would have to be examined further and incorporated in the policy on the elderly suggested earlier.

The issues relating to the elderly are not confined to the health sector. They would have to be considered as part of other social sectors such as economic assistance, housing, transport, food supply, etc. While each sector may administer its components relating to the elderly, the issues cannot be viewed in compartments. The need for a mechanism for inter-sector coordination would be evident.

It would be desirable to designate a specific department that would be concerned with the issues of the elderly and that would be responsible for ensuring coordination. This department may also formulate a draft policy on the elderly and disseminate it for wide public and professional reaction, before a formal policy is adopted.

Recommendations

- *A policy for the elderly should be formulated, with particular safeguards for women, and the administrative Department responsible for implementation of this policy should be designated;*
- *The scale of user fees for health services, if charged, should be reduced in the case of the elderly patients, so as to lessen the burden on the household in availing of medical assistance for the elderly*
- *The health problems of the elderly are often accompanied with disability, loss of some faculties and psychological problems. Special skills would be necessary for treating the elderly. The skills and knowledge required in treating the elderly by the primary health care system, because of its reach, should be strengthened through sensitization and training;*
- *Geriatric care facilities should be provided at the secondary and tertiary levels. In addition, private health institutions should be encouraged to provide such facilities, and a per-patient payment system by Government could be considered.*
- *The managements of both public and private institutions would need to be sensitized to the special needs of the elderly. Single point counters to avoid multiple trips to various counters in an institution, elimination of long waits and patience in personal interaction are some of the measures that would seem essential.*

- *For sensitization to the health issues of the elderly and training in providing health services to this group, (a) in-house training in geriatric care should be instituted within the Department, (b) the associations of private institutions could be requested to conduct similar courses, and (c) the content of medical courses need to be reviewed so as to train medical graduates in geriatric issues.*

Such courses on geriatric care should be introduced in training of nurses and para -medical staff also.

- *Health insurance schemes for the elderly need to be introduced. The formulation of such schemes could be assigned to the public sector Indian insurance companies, including the Karnataka Government Insurance Department.*
- *A scheme for provision of old age pensions to those below the poverty line with suitable safeguards to ensure that the right beneficiaries receive the amounts should be formulated;*
- *Non-government organisations could be assisted in utilising services of the elderly in productive activities as teachers and the like and establishing of care centres. Such organizations could also be encouraged to establish counseling centres to advise the elderly and their families on problems relating to the former;*
- *The introduction of legal provisions to ensure that the family takes the responsibility of looking after the elderly could also be considered as has been attempted through the Himachal Pradesh "Maintenance of Parents and Dependents Act", 1966.*
- *Efforts through the media to restore family values and also to indicate the measures instituted for the elderly and to dispel the notion of the elderly being either of little help in the family or as a burden, especially in the case of widows. Traditional publicity modes could be inducted for this purpose.*
- *Panchayat institutions could be encouraged to promote the welfare of the elderly and induct them, on fixed honoraria basis, for specific work in the community.*
- *The mechanisms suggested elsewhere for intersectoral coordination would have to consider issues relating to the elderly along with related issues pertaining to other social and development sectors.*

11. HEALTH PROMOTION

*Two roads diverged in a wood,
I took the one less travelled by,
And that has made all the difference.*

- Robert Frost

“Health promotion is the process of enabling people to increase control over the determinants of health and to improve their health”- Ottawa Chapter. WHO, 1986.

Health promotion aims at improving the health of individuals and communities. It is “the sum activity of the population, the health services and other productive and social services, aiming at improving the status of the individual and collective health” – PAHO, 1991.

Continued efforts at improving health are a must. There is resurgence of old infectious diseases such as malaria and tuberculosis and emergence of new diseases, such as HIV infection and AIDS. There is also resistance of insects (vectors) to insecticides and bacteria to drugs. We are in a stage of health transition causing the double burden of communicable and non-communicable diseases. The cost of health care has been increasing, with commercialisation of health care. The new patent laws further worsen the situation.

Enabling people

Empowerment of people for health means that they must have health literacy and skills and capacity to acquire health and maintain it. It also means that people are aware of their rights and will demand health care. People will participate in the planning, implementation and monitoring of health programmes.

Strategies

The International Conferences on Health Promotion (Ottawa, 1986; Adelaide 1988; Sunderwall, 1991; Jakarta, 1997) had spelt out the strategies for health promotion. These strategies are:

1. Build healthy public policy
2. Create supportive environment
3. Strengthen Community Action
4. Develop personal skills
5. Reorient health services.

The Jakarta declaration gave certain priorities in the call for health promotion. We can think of other strategies.

• Promotion of healthy life styles

The most improvement component of health promotion is the promotion of healthy life styles. This has been advocated by Ayurveda, which placed emphasis on *dinacharyas*, *rtucharyas* and other health promoting practices, including exercises, yoga and meditation. Ayurveda insisted on purity in everything; purity of water,

purity of food, purity of body, purity of mind and purity of environment. It is also necessary to avoid certain harmful behaviours, such as use of tobacco in any form (smoking, chewing or use as snuff) or alcohol or addition forming drugs.

- **Prevention of disease**

By observing certain principles, we can avoid diseases. They can be prevented by procedures such as immunisation, safe drinking water and sanitation

- **Community development**

An essential element in health promotion is community development. Health promotion requires that we face and resolve the problems of basic standards of living as well as economic, environmental and social inequities. We must identify the factors that encourage inequity and take action to remove them or alleviate their adverse effects. Public participation is important in modifying unsanitary conditions and unhealthy behaviours.

Health promotion strategies must incorporate the cultural traditions and social procedures that are integral for the development of people and societies.

11.1 HEALTH EDUCATION

A major component of health promotion is health education. Health education is “ a process which affects change in the practices of people and in the knowledge and attitudes related to such changes”. –Health education Monographs, 21, New York, 1966. Health education aims to:

- Ensure that health is a valued asset to the community;
- Equip people with skills, knowledge and attitude to enable them to solve their health problems by themselves or with help from others; and
- Promote the development and proper use of health services.

Various media can be used effectively for promoting health. Print media are very effective in giving health information and promoting health. The readership of newspapers and magazines is increasing (in spite of the fears that electronic media will depress it). The Health Promotion and Education Department of the State should be vigilant to make use of opportunity. The Government should ensure that health denying advertisement (like that of tobacco in any form, alcohol) do not appear in the print media. The recent decision of the Central Cabinet in regard to tobacco is a most welcome measure. The State must support it fully.

Folk media

The folk media are probably the best. Health education bureau can prepare scripts (appropriate for the location and audience) and train people in such activities as street theatre, yakshagana, etc.

Electronic media

The electronic media can be used effectively. Both Doordarshan and All India Radio can be used. Since electronic media are often used for entertainment, efforts must be made to make the shows and talks entertaining and instructive.

Films, posters and other audio-visual materials can be used, as also exhibitions strategically.

Monitoring of media

While it is important to have the right messages, it is still more important to ensure that wrong messages are neither given nor unhealthy life styles shown. There can be health committees attached to Doordarshan and AIR to enable them to communicate effectively. A Watchdog Committee must be appointed to watch out that the media do not give the wrong messages or put out advertisements that can lead to hazardous and unhealthy lifestyles.

State Health Education Bureau

The Bureau is concerned with the Information, Education and Communication within the Health Services. It has two divisions. The first division is concerned with planning, implementation and monitoring health education activities pertaining to family welfare in the rural areas of the State. It is headed by the Project Director, Reproductive and Child Health (RCH) services. The Second Division is headed by the Additional Director, Health Education and Training.

The State Health Education Bureau has used the standard methods: mass media, folk media (drama and street plays), exhibitions and group discussions. There has not been enough follow-up and hence the outcome of these efforts in changing behaviour is not known.

Block Health Educators

Many of the posts in the Bureau are vacant. This is particularly so in the case of the District Health Education Officers and Block Health Educators. There is need to rethink the location and work of the Block Health Educators who are attached to the Primary Health Centres. There are 782 sanctioned posts of whom 517 are working, whereas there are 1676 PHCs. It is suggested that we relocate the Block Health Educators at the Taluka level with each BHE being in charge of 2-3 PHCs and supervised by the officer at the Taluka level.

Out of 517 Block Health Educators at the Primary Health Centres, only 51 have the Diploma in Health Education, whereas 466 do not have the required qualification. It is necessary that all the health educators be trained well (Diploma in Health Education). 50-60 Block Health Educators may be trained per year. All new entrants must have the requisite qualification.

Intersectoral collaboration

There is need for strong linkages between the Departments of Health and Education (See section on School Health). Another important department is that of Information and Broadcasting. They have the necessary expertise and requisite contacts with respect to the media. Poverty is the greatest killer. It breeds death, disease and disability. Health promotion measures must address the issue of poverty and ill health. Medical and Dental Colleges, Nursing schools and colleges, schools and colleges of Pharmacy and many other educational institutions can help in health promotion. It is the duty of the Health Services Department (State Health Education Bureau) to collaborate with them and get them involved in health promotion.

Health Education Bureau II

This section has 5 State level units: audiovisual, field study and demonstration, school health, exhibition and training. Many of the posts are vacant: the functioning of this section is "not very satisfactory", according to the study conducted recently (2001) by the International Union for Health Promotion and Education, South East Asian Regional Bureau, Karnataka Chapter.

Audiovisual Unit

This Unit is concerned with the training of health personnel in the design, production and procurement of audiovisual aids and their use.

Field Study and Demonstration Unit

The Unit is expected to work out effective methods and media for health education and the planning, organizing and implementing programmes and investigation of issues in health education and solution of the problems.

11.2 HEALTH PROMOTION IN SCHOOLS

School health promotion includes all activities that a school can use to make the children healthy and to spread the message of healthful living and practice to all those who attend and work in the school and to their families and communities. Effective health promotion in schools has a number of components:

- Safe and healthy school environment
- Availability of safe drinking water and good sanitary arrangements, e.g.; toilets
- Sound nutrition practices (including supplementary food, where necessary).
- Good health services practices (including mental and emotional support)
- Effective health education.

Health services in schools

At present, medical examination of students of first, fourth and seventh standards are carried out by the Medical Officers of the PHCs, assisted by the Health Assistants. It is necessary to extend the services to all the children (all standards from 1 to 10) systematically, so that every child is examined at least once a year. Remedial measures must be taken up so that defects can be rectified. The study on health promotion has this to say: “Though the physical targets achieved are above 80%, the quality of service appears to be very poor”.

School health education

Health education is the most important part of health promotion in schools. The state has the following goals for its school health education programmes “To enhance and promote health education of school children in every possible manner, to enable them to adopt measures to achieve and remain healthy and develop in them a self reliance and social responsibility and better quality of life not only as children of today, but also as adults of tomorrow”

School health education is through instruction in the classroom through all school subjects (syllabus and curriculum) and in the playing fields and outside. It is then translated into action, in and around the school and in the community.

School health promotion is an investment in the future society. School children study better and are happier if they are fit and well. School children if ill, cannot concentrate on the lessons and may miss school and find it difficult to catch up. Sometimes they drop out of school. Children who learn to listen, observe, communicate and take decisions about their own health can help their family members to become healthy. They become good parents and active and useful community members.

A school that promotes health

- Is all for health, fostering health with every means at its disposal;
- Involves all members of the school (students, teachers and non teaching staff) and the community around it to promote health
- Strives to set an example through environment protection, good nutrition and safety measures;
- Develops life skills in children;
- Promotes ways of giving children responsibility; and
- Raises self esteem of the children

School Health Implementation in the State

The Medical Officer of the Primary Health Centre is responsible for medical examination of students of 1st, 4th and 7th standard students. The District Staff supervises the activities. The District Health Officer reports to the head of the Health Education and Training section at the State level. According to the recent (2001) study conducted by the Karnataka Chapter of the South East Asia Regional Bureau of the International Union for Health Promotion and Education, the performance has not been satisfactory: “Remedial measures and follow up: done very superficially”; “nutritional services: no programme”; “health education: not carried out systematically”; “teachers training: carried out, but not sufficient”; “maintenance of school health record: not done systematically”; “school environment, water supply and sanitation: nothing is done. “It is necessary to improve the situation drastically.

Integration of IEC activities

There are Information, Education, Communication (IEC) activities in many programmes and projects in Health and Family Welfare Services – namely, Health Care, Reproductive and Child Health, Karnataka Health Systems Development Project, India Population Projects VIII and IX, AIDS Society and others. There are IEC sections in malaria, tuberculosis, leprosy and blindness control. Integration of all IEC activities will have a salutary effect. This can be done by bringing them together under the Health Education Bureau. At the same time, it is necessary to ensure that the individual programmes and projects do not suffer. Arrangements must be made in each scheme to have a designated officer to liaise with the Health Education Bureau. The synthesis of all IEC activities can help health promotion and education.

Collaboration between Central and State Media Units / Departments

The Inter-Media Publicity Coordination Committee (IMPCC) is a Central Government initiative to ensure better coordination between different media units to raise the level of awareness and promote public welfare. It is a confederation of the media units of the Central and State Governments, Public Sector Undertakings and Nationalised Banks functioning in the State Capitals. IMPCC meets once a month. It discusses strategies and initiatives of various media units.

Similar committees exist in some districts under the chairmanship of the Deputy Commissioner. It is necessary that District Committees be established in the remaining districts also. It can help in improving grassroots communication through coordination involving all the concerned departments and non-governmental organisations. The State and District Committees should ensure full involvement of the people in the policies and programmes for health promotion.

11.3 ADVOCACY FOR HEALTH PROMOTION

An important component of action to achieve health promotion is advocacy. It involves all aspects of making persons aware of the issues and problems and motivate people to act to solve the problems. Efforts have to be made to inform, to continue and to persuade all people and especially the policy and decision makers and the implementers.

Advocacy can lead to action at local level or to a mass movement with far-reaching results. The Voluntary/ People's organisations are the best groups to carry out the advocacy programmes. In order to carry out advocacy successfully, the persons involved must have the necessary information and reliable data as also knowledge of what are the goals and how to reach the goals. It calls for leadership. If properly applied, advocacy is the best means of achieving health promotion.

Recommendations

- *Medical examination of all students (1-10 standards) by the medical officers and the team of PHCs must be taken up seriously and the performance monitored by the District Health Officers. If necessary, the services of general practitioners may be taken and they be paid a suitable honorarium.*
- *The Block Health Educators (2-3) may be attached to the Taluk Health officer. They must carry out health education in every school in the area and for the population covered by the PHCs to which they are attached. District Health Education Officers must monitor the programme.*
- *The school environment must be improved, involve the students and teachers;
Safe drinking water must be available throughout;
Toilet facilities must be provided, separate for boys and girls.
Zilla Panchayats should be persuaded to invest in these activities.*
- *Intensify the training of teachers for health; they should be enabled to detect diseases or disability at the earliest; corrective action should be taken by the PHCs doctors and the students must be followed up.*
- *The programme of health promotion is the combined responsibility of Health and Education departments.*
- *All the vacant posts in the different units/divisions of the Health Education Bureau must be filled up.*
- *The Block Health Educators must be fully trained and should have the necessary qualification (Diploma in health Education); 50-60 Block Health Educators may be deputed annually for the training. An important part of the training must be skills development in community organization and involvement of the local people in health promotion and education. Strengthen community action.*
- *Encourage and support Mahila Swasthya Sanghas. Have Village Health Committees; health promotion and education will be a major responsibility of these committees.*

- *Have health committees attached to Doodharshan and AIR to actively help in health promotion. Have a watchdog committee to prevent wrong messages and 'unhealthy' advertisements.*
- *The Department of Health and Family Welfare Services must collaborate fully in the functioning of the Intermediate Publicity Coordination Committees at the State and District levels for dissemination of information and the creation of awareness on matters affecting health.*
- *At least 5% of the health budget must be allotted to health promotion and progressively increased to 10%, as Health Promotion can yield rich dividends by way of improving health.*
- *The Non Governmental organisations must be encouraged in their activities for health promotion including innovative programmes.*
- *Bring all IEC activities in the Department of Health & Family Welfare Services under Health Promotion; at the same time, ensure that the individual programmes do not suffer. Integrate the two sections of the Health Education Bureau into a division of Health Promotion.*
- *Intersectoral co-operation of the developmental departments and especially Health, Education, Women and child welfare, industry and Information and Publicity, and Broadcasting, is necessary for health promotion and education.*

12. HUMAN RESOURCE DEVELOPMENT FOR HEALTH

*"As long as millions of people live in hunger and poverty,
I hold every man a traitor who having been educated at their
expense pays not least heed to them"*

— Swami Vivekananda

Health services require large members of well-trained qualified professionals and workers, with a variety of skills and appropriate knowledge, and attitude to improve the health of the people, and to reduce suffering due to ill health. It is necessary to have formal and informal educational centres to train persons in **adequate numbers** and of the **requisite quality**.

The biggest challenge to the health-care education institution is not just technical, managerial or financial development, but quality human resources development, which includes:

1. formation of young health professionals and supportive staff who are responsive to social, technical, scientific and management abilities to work effectively in a comprehensive health system;
2. development of a faculty team, consisting of not just good teachers but learners – oriented facilitators of an educational process, who are also good role models with social vision, commitment to ethical norms and values; and inspirers of people and community oriented vocations through precept and example; and
3. development of a supportive team of staff who will complement the faculty in the educational institutions, laboratories, outpatients, wards and other specialized clinics, field practice areas and community health centers, with needed skills and motivation.

12.1 HEALTH PROFESSIONALS' EDUCATION

There is distorted and disturbing situation of Human Resources Development for health. The emphasis is too much on production of medical doctors with mushrooming of medical and dental colleges in the State. Such large-scale increases are seen in the number of colleges for other systems of Medicine and in disciplines such as Nursing, Pharmacy and Physiotherapy.

The existing health science institutions have been churning out graduate physicians and other professionals, whose number is much more than the actual need. Should we sacrifice the quality of education just to satisfy a few aspiring groups?

Out of 172 medical colleges and 123 dental colleges in the country, 23 medical and 38 dental colleges are in Karnataka. Approximately 30-40% shortage of teachers is observed in all the health science institutions in Karnataka State, resulting in substandard health professional's education.

This will have direct impact on providing quality primary health care to the community. Should we jeopardize the health care system, by producing health professionals, who lack confidence and competency to take care of the health of the community?

It is very essential to consolidate the existing institutions by building the capacity to the desired level and develop a better system of health professionals' education.

There is clustering of medical and other teaching institutions in certain cities and districts, while some of the districts do not have them.

Reforms in education and training

- Selection of students (both undergraduate and post graduate) should not be based only on the ranking at the entrance examination. Stress should be on the **aptitude** of the candidate. The selection should be based on their commitment to the social objectives and technical challenges of education in the State. The output from these institutions should be need based.
- The education should be **competence and value based**. Nurture the human resources holistically in terms of knowledge, skill, values, attitude and social commitment. For this process to be effective, the focus should be on three dimensions- *professional, personal and social*.
- A doctor has to face **moral and ethical dilemmas** all the time. He/she must be prepared to face these problems, just as he /she faces clinical or health problems. Then only can the doctor take appropriate decisions. Rajiv Gandhi University of Health Sciences has taken the right step in recommending teaching and medical of medical ethics throughout the course including internship.
- The education should be **scientific and evidence based**. The approach should be **humanitarian and holistic**, rather than disease oriented. Day by day the doctor-patient relationship gap is widening. Commercialisation has eroded the doctor's **concern for the patient**. The education which at present is knowledge oriented, should focus on development of required skills, and attitude so that he/she will have the confidence and competency to face the challenges in caring for the individual, family and community. The teaching and learning programmes should be oriented taking into consideration the abilities identified by Medical Council of India and other professional councils, which are required for a graduate to practise independently. The thrust should be on **student centered learning** rather than to satisfy the teacher's capability. They must be encouraged to get involved in electives or small projects. The teacher's role should shift from a mere instructor to that of a facilitator and create a situation for the student to learn by participating in the learning process. There should be stimulus to the student to apply his/her mind and provide an opportunity for self-learning.
- Medical and health professional colleges and other health care institutions must adapt to the important health reforms in the society. The students must accept a certain degree of **accountability** towards society's health if they wish to continue to be forces for social progress and consequently to merit taxpayers support. It is their obligation to direct education, research and service activities towards addressing the priority health concerns of the community, region and state; they have a mandate to serve.
- At the time of admission, the student should be exposed to educational objectives, skills of learning and communications, National Health Policy, values, group dynamics, team work concept, dignity of labour, use of library and computer application. Foundation courses should be organised towards development of personality and leadership qualities. During the course, equal importance must be given towards involvement of students in cultural and sports activities. To counter the enormous stress during the course, continuous counseling of students should not be lost sight off.

- Apart from concentrating only on the merit, non-scholastic capacities like: thinking skills, speed of thinking, aptitude, group behaviour and communication skills of the candidate must be given weightage. His /her knowledge in the field of **behavioural sciences** also need to be tested.

The students should be actively involved in social actions and disaster management. A brief exposure to National Service Scheme (NSS) would enable them to understand the fabric of the society.

Faculty development

- Selection of teachers should be not only based on academic merit and professional experience, but also on social / community perspective and aptitude. Commitment to the profession should be emphasized. He / she should be a good motivator and facilitator to the student learning. Qualities such as ability to motivate and leadership must be part of the criteria for selection. Methods to assess these qualities have to be identified.
- Soon after the appointment of a teacher, he / she should be oriented to the vision and mission of the institution. Orientation or induction courses should be organized in the field of educational science and technology (including problem based learning and examination, and assessment methods). He/she must provide quality training to the students, which is socially relevant to the community. He/she must actively participate in research, which is relevant and beneficial to the society.
- He/she must attend continuing education programmes and conferences for individual professional enrichment. Must be encouraged to take up social/ community oriented activities.
- He /she should not forget the obligation towards collective development of the department and the institution.
- A system of assessment of teachers by students, peer group and the head of the department, should be developed. Needless to say one must be prepared for self-evaluation also. Such assessments should be considered for promotion etc. The services of teachers who show initiative and innovation must be recognized.
- Private practice should not come in the way of their professional obligation to the student, department, institution and the patient.

Vacancies of teaching staff

There are a large number of vacancies in the teaching staff in the educational institutions. These must be filled by qualified teachers. The norms stipulated by the councils and other bodies regulating professional education must be met.

Curriculum development

- The students should be socially oriented with emphasis on Primary Health Care approach.
- The public health concept, which has lot of relevance on the health of the community, has to be revived.
- The students should have an exposure to the management aspects of health care delivery system.
- Students should have an opportunity to learn through alternate parallel tracks.
- Curriculum should be reviewed periodically depending on the changing needs.

Public health

There has been neglect of Public Health. There is need to have training in Public Health for health professionals at various levels. These would include short orientation courses, certificate and diploma courses. All Health Officers must have the postgraduate degree or diploma in Public Health or Community Health.

Educational settings

- This should be relevant to the health (felt) needs of the community. There should be adequate clinical material for the students to acquire required skills and hands on experience.
- The training should have a definite slant towards community based learning. Programmes should provide opportunity for the students to understand the social structure, its functions, norms and values and social factors which precipitate disease condition in the community.
- Due emphasis must be placed on nursing care.
- Students from one system of medicine should be oriented to other systems of medicine, to be aware of strengths and weaknesses and to encourage respect for each other.

Library

With the explosion in information, the library should be equipped to retrieve information through modern technology. The institutions must move forward in setting up **digital libraries with online facilities**. The institutions should develop networking with other institutions for mutual benefit. Creating a library set-up at the University and linking the University library to the libraries in the affiliated institutions will be very useful. This should be developed as an information and learning centre at the University with audiovisual equipments.

Create more facilities for students to take up **self-learning**, so as to have **life long learning**.

Institutions

The question of granting **professional autonomy** to selected institutions should be seriously thought of. If the institutions have developed well, in terms of infrastructure and faculty, providing autonomy may have a positive effect on their obligation to the society; thereby the institution can render better medical and health care to the community. Even the departments should be encouraged to raise resources of own. Reasonable amount of funds should be made available for up-gradation of existing facilities to enable the institutions to provide better education to the students. Institutions should be accredited based on their social accountability (relevance, equity, quality and cost-effectiveness).

Commercialisation and corruption in medical education

Commercialization and corruption are two very important issues, which need to be addressed urgently. Privatization has come to stay. This fact needs to be accepted. Many private institutions have developed good infrastructure and are providing medical education of high standard.

Corruption in medical education has raised its ugly head at various levels. A mechanism must be evolved to root out this cancerous process. Otherwise it may erode the credibility of the system. Corruption is seen at every stage, including examinations, both undergraduate and postgraduate. Examiners, against whom there are charges of corruption, must be removed from examinership and disciplinary action taken.

In this direction Rajiv Gandhi University of Health Sciences has established a commission to curb professional misconduct. The hands of the University should be strengthened to put an end to corruption.

The need for health human power

At present the turnover of health human manpower is based more on political expediency than on the felt needs of the society. Even the distribution of the health professionals is not according to the community need. Creation of more number of educational institutions over and above the actual need in some faculties and branches has resulted in falling standards in training, which in turn has affected provision of quality health care to the community.

There should be effective periodical interaction between the departments of medical education and health care providers, both in government as well as private sector. There is a need to work out the optimal requirement of various health professionals.

The real need of the hour is to impart health professionals education in such manner to the students so as to achieve Health For All through the concept of Primary Health Care approach. All the health sciences professionals are equally responsible for providing HFA.

Number of institutions

The number of institutions affiliated to the Rajiv Gandhi University of Health Sciences together with the number of sanctioned seats (undergraduate and postgraduate) is given in Appendix 1.

While there is clamour for more professional colleges and increase in the number of seats, many courses and many institutions do not attract enough eligible students, leaving many seats vacant. This leads to inefficiency. A few examples are given in Appendix 2, which shows the sanctioned intake, actual admissions and percentage of admissions to the sanctioned number of seats in Nursing, Pharmacy and Physiotherapy during 96-97, 97-98, 98-99 and 99-2000.

Majority of the Colleges have large numbers of vacancies. These colleges do not have enough number of qualified staff. They also lack infrastructural facilities like building, lecture halls, laboratories, equipment and library. Clinical facilities are also insufficient.

The policy of permitting more and more institutions and increase in number of seats must be stopped. What is needed is consolidation and improvement of quality.

Family medicine

At present family medicine does not find a place in the undergraduate training. After completion of their internship, many young doctors prefer to set up general practice. But due to lack of exposure, they do not have adequate confidence or competency to face the realities of practising family medicine. Curriculum needs to be developed to train the undergraduate students in this field. Selected family medicine physicians may be inducted into the training process and the students exposed to this field during their internship training.

RAJIV GANDHI UNIVERSITY OF HEALTH SCIENCES, BANGALORE

This University is committed to impart quality education and to develop high quality health human power resources. Efforts are on to develop linkages and networking with other universities and research institutions in the State, country and abroad. Linkages are being developed with both government and non-government organisations, dealing with development of trained manpower resources.

Goals of education and training in RGUHS:

1. The curriculum should be oriented towards educating students of health sciences to take up the responsibilities of physicians of first contact. The graduate should be capable of functioning independently in both urban and rural environment.

2. Post graduate students must:

- a) Practise the chosen specialty efficiently, backed by scientific knowledge and skill base.
- b) Exercise empathy and a caring attitude and maintain high ethical standards.
- c) Continue to evince keen interest in continuing education irrespective of whether he / she is in a teaching institution or is practising.
- d) Be a motivated “teacher” – defined as one keen to share knowledge and skills with a colleague or a junior or any learner.

Professional registration

Professional councils should monitor and curb unethical practices. Machinery and mechanism should be developed to take up periodical medical and prescription auditing.

Periodical renewal of registration should be introduced. This should be based on credits acquired by attending approved Continuing Education / Continuing Professional Development programmes.

The professional councils must be strengthened to ensure ethical and competent practice.

Exposure of students to special problems

Students must be aware of the unequal distribution of health human power across the state and the country. They must study the patient in the total environment i.e. physical, social and occupational. Must make an in-depth study into the National and State health policies. They should have a short exposure on community based rehabilitation of persons with disabilities.

Currently gender is recognized as a term that reflects the complex social relations between men and women. The process of socialization has lead to generally inferior position of women within the family and in all other institutional groupings that exist in the society.

With current global and national trend towards globalization, liberalization and commercialisation which includes commodification of women and of medical care, it is all the more important to emphasize and reiterate in health professionals education certain basic values in health. These include equity, social justice; ethics, gender sensitivity, sustainability and self-reliance.

There is tremendous need for further work on gender and power issues in health professionals education. Besides research and analyses, the coming together of different streams, with networking and sharing of experience between groups is required. Most importantly, there is need for engagement with bodies concerned with medical education such as apex professional councils, health and other universities and, professional associations and NGOs.

Research

At present this is the most neglected area in health professionals education. This should develop as an in-built culture. The University and the teaching institutions should spell out policy statement to encourage and support research activities at the University and institutional levels. Research activities should be prerequisite for promotional opportunities of the faculty.

Research is essential in various areas (Please see separate chapter on Research). Research is particularly important to solve problems of public health importance and Karnataka specific health problems, such as Kyasanur Forest Disease and Handigodu Syndrome.

Basic principles of HRD plan:

- It should support institutional policy and guidelines.
- Create the right environment where values are caught.
- Proactive planning is required especially in today's environment when market values of individualism, competition, commercialization, profit motive etc. are constantly distorting health professionals institutions and environment.
- Develop faculty and role models.
- The initiative should be consistent, accessible to all and evolving through feedback.
- HRD initiative should be constantly monitored and the best stimulus for evolution is regular feedback from students, faculty and trainees.

Essentiality certificates

In the interim recommendations on Health Human Resources Development, after reviewing the existing number of institutions, the annual intake and output and the needs of the state, it had been recommended that "the issuing of essentiality certificate by the Government and affiliation by the University for new Medical, Dental, Nursing, Pharmacy and Physiotherapy colleges should be stopped for the next three years, the exception being Nursing colleges in underserved areas of Karnataka". The Task Force notes with regret that Essentially Certificates have been issued to more new medical colleges. The Task Force wishes to reiterate its recommendation; **"no more essentiality certificates may be issued for the next three years"**.

The Task Force had also recommended extension of the moratorium on new Ayurvedic, Homeopathy and Unani Colleges by another 2 years.

The needs of the State for qualified health personnel for various categories of professionals may be studied by an expert committee appointed for the purpose and criteria fixed for approving new institutions, like absence of such institutions in the district.

12.2 TRAINING

Adequate training of allied health professionals and paramedicals in numbers and quality is extremely important in ensuring good health care services. There are a large number of institutions and courses both in the Governmental and non-governmental sectors. These have grown mostly in a haphazard manner without taking into consideration the need of the State.

The names of the courses, the number of institutions, intake capacity and duration of the course are given in Appendix 3.

Training institutions

The Directorate of Health and Family Welfare Services has a network of training institutions.

1. State Institute of Health and Family Welfare (SIHFW)

The State Institute must be developed to be the apex, nodal centre for all training programmes in health in the State. It has to be upgraded to become an Institution of Excellence. A number of training programmes for medical officers and others are being conducted here but higher standards are needed.

One of the objectives of the State Institute has been the development of training programmes in Public Health. This has become an urgent need with the proposal to have medical officers at all levels trained in Public Health. This would include orientation courses of short duration, certificate courses and postgraduate diploma and degree courses in Public Health.

The Institute has to develop its capability for conducting other courses, including health promotion and management. In order that the Institute may function effectively, it should be an **autonomous** body, with experts and administrators in the Governing Body. The funds for its activities and maintenance should be allocated directly from the State Health and Family Welfare Department.

The Institute should have a Director. It will be selection post. The tenure will be 5 years. There has to be close co-ordination between the Institute Director and the Commissioner / Director General of Health Services. Close linkages must be worked out between the Directorate of Health and Family Welfare Services and the Institute. The Director will report directly to the Principal Secretary, Health and Family Welfare. He / She will be medically qualified and should have had training and experience in medical education and training of trainers. It would be preferable to have a person who had worked a few years in the Department of Health and Family Welfare Services.

There will be a Deputy Director. Suitable persons will have to be identified by a selection process. The qualification and experience will be similar to that of the Director.

The Institute will have the full complement of training, administrative, research and supportive staff with appropriate qualifications. It is expected that some of the staff will have to be appointed by different approaches (lateral entry). This will be especially so with respect to social sciences, communication and management. These may be filled up by either full-time / part-time staff or by engaging the services of experts as and when required during the training sessions.

The Institute will have all the necessary training equipment and facilities, including teaching space and identified field practice areas. It will have an up-to-date library and documentation center, using modern information technology.

2. Regional Health and Family Welfare Training Centres (RHFWTC)

There are 4 Regional Health and Family Welfare Training Centres at Bangalore, Mysore, Hubli and Gulbarga. There is wide variation in the infrastructure and programmes of training conducted at these centres. Some of the key posts are unfilled or are filled with wrong personnel. There is need for optimum utilization of the resources.

RHFWTCs will be administratively under the State Institute. The budget for RHFWTC will be released by the State Institute. The centres will cater to training needs of the regions; the training programmes will be planned together with and coordinated by the State Institute. Qualified competent staff will be appointed to the regional centres. All necessary facilities and equipment will be provided to these centres to ensure efficient and effective functioning.

3. District Training Centres (DTC)

Some districts have their own training centre. This will be extended to all districts. The District Training Centres will be under the overall supervision and co-ordination by the State Institute. The District Centres would be administratively under the State Institute, which would release the necessary budget. The District Centres will oversee the functioning of the ANC training centres also. District Centres will have the necessary staff, equipment and facilities.

Training needs

A systematic comprehensive training needs assessment should be undertaken. At present, there is either duplication of training or absence of training in some important areas.

The heads of training institutions and the faculty should undergo pre-posting training in educational technology. The training manuals must be updated periodically.

Induction training

All categories of health personnel require induction training. Lack of induction training resulted in lack of self-confidence and competence.

The Medical Officers of PHCs should be given training, which will help them to manage the administration of PHCs. The duration should preferably be 3 months: one-month theory at the training centre and 2 months at the PHC/Subcentre level. The training pattern should be one-third fieldwork, one-third group discussion and problem solving and one-third lecture demonstrations.

- The paramedics should also be given induction training. The nursing staff (staff nurses and ANMs) may be given induction training of 2-3 weeks. There is need for skill training for laboratory technicians.
- The topics should include administration and office procedures, interpersonal relations, motivation, medico legal aspects and development of leadership qualities.

In-service training/continuing education

In-service training helps to update skills, knowledge and attitude. The contents, method and duration will vary depending on the needs. The training should generally be participatory and skill based. group techniques and problem solving methods should be used.

Promotional training

It is necessary to give additional training when a person is being promoted to a higher post, especially when it involves more administrative and supervisory responsibilities e.g. when an ANM is being promoted to an LHV or when a Medical Officer is promoted as a DHO or Medical Superintendent.

12.3 CONTINUING EDUCATION

All health professionals and functionaries must update their skills, knowledge and attitude through continuing education / continuing professional development programmes. This should be mandatory. A credit system must be introduced where the health professionals will participate actively in approved programmes. The Councils, regulating the professions, must introduce a system of renewal of registration every 5 years for which the health professionals must earn sufficient credits. Credits may also be made a pre-requisite for promotion to higher cadre.

The continuing education / continuing development programmes may be conducted by recognised professional associations, or medical and other academic professional institutions. Each programme must be assessed carefully and credits assigned to such programmes. The State Institute of Health and Family Welfare may also take up the continuing education of health professionals.

Recommendations

- *The issuing of Essentiality Certificates by the Government and affiliation by the University for new Medical, Dental, Nursing, Pharmacy and Physiotherapy Colleges should be stopped for the next two years, the exception being Colleges in underserved districts of Karnataka. This is to ensure quality of education, with adequate teaching staff and other facilities.*
- *Extend the moratorium on new Ayurvedic, Unani and Homeopathy Colleges for two more years.*
- *Take up urgently the repairs of the building of the colleges, hospitals, hostels, equipments and vehicles of the Government teaching institutions. All equipments must be maintained in good working condition.*
- *Fill up all vacancies of teaching staff by suitably qualified persons.*
- *Improve the emergency and casualty services. There should be available round the clock diagnostic (x-ray and laboratory) services.*
- *Essential drugs must be available at all times. The list must be relevant to the level of care.*
- *The medical, dental and other institutions (pharmacy, nursing) must take up the teaching of the concepts of Rational Use of Drugs and Essential Drugs.*
- *Medical Colleges should take up 3 PHCs for training and service. Dental and Nursing Colleges should take up 1-3 PHCs for the same purpose.*
- *Corruption at the University examinations should be eliminated. Extra vigilance is necessary. Corrupt examiners should be debarred from examinerships.*
- *Monitoring and evaluation (performance appraisal) of teaching and other staff in the health professional colleges and affiliated institutions should be carried out once a year; the performance should be taken into consideration for promotion and other benefits.*
- *Appropriate training and re-training of Heads of Departments, Resident Medical Officers, Medical Superintendents, Principals and Directors in management, (personnel, financial, materials and time) should be taken up on priority basis.*
- *Every professional college should have an education unit to improve the teaching capability of teachers. RGUHS should organize teacher-training programmes. Make use of the facilities at the National Teacher Training Institute at JIPMER, Pondicherry.*
- *The possibility of bringing the non-teaching staff in Medical College Hospitals under the control of Department of Medical Education may be studied and action taken to implement the decision. The Officers in the Department of Medical Education should have sufficient powers to take suitable disciplinary action even on staff who are on deputation from the health department. An administrative manual setting out the powers and duties may be brought out.*
- *Promote research in the professional institutions. Provide financial support.*
- *Have a detailed survey of the need for training of paramedics and take appropriate action. Review the job oriented paramedical courses.*
- *Auxiliary nurse midwives training to be taken up seriously. Whether there is need for extension of period of training to 24 months (from 18 months) must be examined.*

- *Use developments in Information technology for continuing education of all health and allied professionals and paramedical personnel.*
- *The State Institute of Health and Family Welfare should be upgraded to become the apex training institute, making it an institute of excellence.*
 - *The State Institute will be an autonomous body, with adequate funds for its activities and maintenance allocated from the State Health and Family Welfare Department Budget directly.*
 - *The post of Director will be selection post. The tenure will be 5 years. There has to be close co-ordination between the Institute Director and the Commissioner / Director General of Health Services. The Director will be medically qualified and will have training and experience in education technology and training of trainers. It would be preferable to have persons with some experience of having worked in the Department of Health and Family Welfare Service.*
 - *The Institute will have full complement of training, research, administrative and supportive staff with appropriate qualifications.*
 - *Considering the importance of social sciences and communication skills, the Institute will have either full-time / part-time staff for these departments or engage the services of experts as and when required for the training sessions.*
 - *The Institute will have all the necessary equipment and facilities including teaching / learning space and identified field practice areas.*
 - *The Institute will have an up-to-date digital library and documentation centre.*
 - *The State Institute will conduct induction and orientation programmes for medical officers and other staff and arrange for continuing education for all the staff of the Department of Health and Family Welfare Services and the Department of Indian Systems of Medicine and Homeopathy.*
- *The Regional Health and Family Welfare Training Centre will be administratively under the State Institute.*
 - *The budget for the regional centre will be released by the State Institute.*
 - *The regional centres will plan and execute the training programmes based on the needs of the region; these will be supervised and coordinated by the State Institute.*
 - *The Regional Centres should have adequate staff with requisite qualifications, competence and suitability, as also all necessary equipment and facilities.*
- *All Districts will have their own District Training Centres to meet the training needs of the district.*
 - *The District Centres would be under the State Institute administratively*
 - *The budget for the District Centre will be released by the State Institute, which will plan (along with the District Centre), supervise and co-ordinate the training programmes.*
 - *The District Centres will oversee the functioning of the ANM training centers.*
 - *Adequate staff with necessary qualifications and competence and all necessary equipment and facilities will be provided to the District Centres.*

- *The District Centres will have reasonable libraries, whose facilities will be available for the training programmes and also all the doctors and other staff working in the district. The possibility of making available these facilities to non-governmental health professionals (on payment of a small deposit) may be considered in order to improve quality of care.*
- *The State Institute will, along with the Strategic Planning Cell or the Planning and Monitoring division of the Directorate of Health and Family Welfare Services, identify the training needs and draw up a master plan for the training of staff at all levels.*
- *The training should be in the State mostly. Fellowships / scholarships offered by WHO, Common wealth and other similar organizations must be availed of. The State Institute and the Planning and Monitoring Division should work together to get the relevant information and have the staff deputed according to the needs of the State and the suitability of the staff member.*
- *Encourage the staff at all levels to participate in distance learning programmes of reputed Universities and institutions.*
- *The State Institute must plan and conduct courses in Public Health:*
 - *short term orientation courses (2 weeks?) for all medical officers and selected other staff;*
 - *longer certificate courses (6 months?) for all medical staff in the public health cadres. This will be for the period of transition till we are able to get sufficient number of persons with DPH or higher qualification.*
 - *post graduate courses such as DPH, Masters or Doctorate in Public Health, in collaboration with the Rajiv Gandhi University of Health Sciences, to be started in 3 years.*
- *Encourage the Medical Colleges in the State which are conducting courses in Community Health / Community Medicine to have the courses strengthened to serve the needs of the State.*

General Recommendations

- *The nurse:patient ratio may be studied and action taken to have sufficient number of nurses.*
- *Financial support to carry out research activities and publish papers may be provided.*
- *Teachers who present papers at National and International Conferences may be deputed for the same, meeting the expenses for registration, travel and stay at the conference.*
- *A scheme of providing sabbatical leave may be worked out to upgrade skills and knowledge of teaching staff, taking into consideration the needs of the department, institutions and the State.*

**Number of colleges affiliated/ and number of students in RGUHS,
1999-2000**

Sl.No.	Faculty	No. of Colleges		No. of Students	
		UG	PG	UG	PG
1.	Medical	20	22	2301	1249
2.	Ayurveda	44	10	1770	73
3.	Homeopathy	11	2	570	24
4.	Unani	2	-	75	-
5.	Naturopathy & Yoga	3	-	90	-
6.	Dental	38	12	2177	305
7.	Pharmacy	48	10	2480	234
8.	Nursing	36	5	1410	62
9.	Physiotherapy	37	2	1240	-
10.	B.Sc. MLT	7	-	157	-
11.	B.Sc. Radiography	4	-	67	-
12.	Hospital Management	-	2	-	30
13.	M.Sc. Speech & Hearing	-	1	-	14
14.	Paramedical Technical Courses	5	-	28	-

Appendix 2

Details of Year Wise Admissions in Nursing, Pharmacy and Physiotherapy Colleges under the Rajiv Gandhi University of Health Sciences, Karnataka.

Sl.No.	Faculty	Academic	No. of Colleges	Sanctioned intake	No. of admissions made	% of admissions made
01	Nursing	96-97	20	835	709	84.91
		97-98	22	1030	726	70.49
		98-99	32	1250	886	70.88
		99-00	36	1410	992	70.35
02	Pharmacy	96-97	45	2340	1856	79.32
		97-98	46	2380	1354	56.89
		98-99	47	2400	1189	49.54
		99-00	48	2480	1241	50.04
03	Physiotherapy	96-97	24	905	839	92.71
		97-98	32	1140	807	70.79
		98-99	33	1165	796	68.33
		99-00	37	1240	683	55.08

Appendix 3

Paramedical training facilities in Karnataka (1997-98)

A. Government

Health and Family Welfare Training Centres: 5

Name of the Course	No. of Institutions	Intake Capacity	Duration (Months)
MPW training course (Male)	4	240	12
ANM training – MPW (female)	19	570	18
Laboratory technicians – junior	4	80	12
X-ray technicians	6	36	12
Dental mechanic/ hygienist	1	20	12
Staff nurses – general	9	370	42
Refractionist/ Ophthalmic Asst.	4	60	24
Food inspector	1	40	3
Sanitary inspector	3	60	
Ophthalmic technician	1	20	
Medical records technician	3	60	

B. Non – governmental

There are 71 non-governmental institutions recognized by the Government offering diploma course in paramedical subjects.

Subjects	Intake
Medical laboratory technicians	723
X-ray technicians	530
Physiotherapy	640
Operation theatre technicians	30
Dialysis technicians	5
E.C.G. technicians	25
Inhalation technicians	5
Sanitary inspectors	170
Medical records technicians	58
Ophthalmic technicians/ Refractionist	140
Dental mechanic	54
Dental hygienist	34
Anaesthesia technicians	15

Appendix 4

The following in-service training programmes are conducted by the Department of Health and Family Welfare Services:

Name of the Course	No. of Institutions	Intake Capacity	Duration (Months)
Block Health Educators	5	30	2 weeks
Paramedical-leprosy staff	2	60	4
Health inspectors	7	525	12
LHV training for Senior HA (female)	4	120	6
Laboratory technician, Senior	1	12	12
Continuing Education for Med. Officers	2	30 per batch	2 weeks
Health Asst.- Senior	5	30 per batch	2 weeks
Health Asst. – Junior	5	30 per batch	2 weeks

13. RESEARCH IN HEALTH

*“ People look at things and ask why,
I look at things as they never were and ask why not? ”*
— George Bernard Shaw

Introduction

Research in health and health care is a neglected area in the State. If we are to make progress in health and, through it the quality of life of our people, it is necessary that we address the relevant problems and find solutions to them. The problems must be selected, establishing the priorities, based on morbidity and mortality.

It is important that research projects are designed carefully, including the formulation of the objectives, hypotheses and the statistical design. The study may be based on observational or experimental research. Observational research would include studies on the incidence and prevalence of the disease, its distribution (geographical), trends (changes over time) and others. Experimental research would include planned interaction, involving laboratory, animals or human settings (e.g., clinical trials).

All studies in health and health care, whether individual patient based or population based, would involve ethical principles. All studies would require clearances by scientific and ethics committees. Besides, the design of the studies should include data processing, analysis, evaluation and interpretation of the results, conclusions and publication.

Experimental methods and complex statistical analyses have contributed immensely to the generation of effective treatment interventions. While biomedical researchers can model their research problems to highly specific questions, health care scientists have to deal with much broader concepts. For effective understanding of health, disease and suffering, health care physicians need to integrate specific causes of disease with a variety of other variables that goes with the territory.

Extent of the problem

Health care investigators can contribute much to our knowledge on the origins and natural history of disease. Studies of physician's activities, problem distributions, training schemes, prescribing patterns, appointment policies, office staffing, specimen collection, and management plan are helpful. These are health services research. What this type of research does not do is to throw light on the interacting factors that predispose to, precipitate, and perpetuate ill health and disease. In other words, these studies rarely expand our knowledge of prevention, treatment, and amelioration of disease.

Another development has accompanied the evolution and dominance of medicine. That is the myth of the single “cause” of each disease. Modern medicine, in general, has failed to distinguish between necessary and sufficient factors in the genesis of ill health. This distorts both its theoretical base and clinical practice. The public harbors the notion that most physical ills are due principally to *genes* or *germs*. Both are important but rarely sufficient to cause disease. Undue focus on them tends to suppress further thought about the multitude factors that impose on each individual's disease.

Years ago one visiting doctor accompanied a local doctor making rounds in a village. A troubled mother brought him her feverish, coughing infant. The visiting doctor asked, "what seems to be the trouble?" for which the local physician replied: "the child seems to have bronchitis but the mother is depressed because her husband is chronically drunk. The husband is drinking because the cow, the family's main source of wealth, is dying. The cow is dying because it is the rainy season and the roof is leaking. The roof can't be repaired because there is no money." So, what is the problem, one may ask. "The rain pouring, roof leaking, cow dying, husband drinking, wife's depression or the child's bronchitis!" What is the point of clinical examination of the child when so many unspoken pitiful messages are being sent back and forth from rain to roof to cow to husband to wife to child? Would the child have developed bronchitis if a kindly neighbor had repaired the roof?

The delivery of public health services is a priority area and we have not been able to identify the best practices that could be replicated in our state to reach out to the needy. Although infrastructure for providing primary curative care has been enlarged, it is not matched by qualitative improvement in the delivery of health care. Focused research in this area can identify the worrisome issues and plug the loopholes. Women are considered as primary health care providers and their perception of the services and knowledge regarding health is also crucial.

• **Intersectorality of Health Care**

The definition of health would not only mean health services as provided by the Department of Health and Family Welfare, but has a larger association which includes the area of water supply, sanitation, issues related to women and child welfare, family welfare and nutrition. We must evolve strategies such as support, community organisations and partnership.

• **Other Pressing Problems**

Added to all that has been mentioned earlier is the appearance of morbidity that is associated with an increasingly ageing population base. We have to tackle this along with the unfinished agenda of controlling communicable diseases, under-nutrition, and others. Research into the social, educational and public health strategies must be put in place employing the models already tested in developed countries. One could start this with estimating the burden of common diseases in all districts of the state and compare the burden among the districts. Next, provide estimates (district-wise) for communicable diseases, non-communicable diseases and injuries and accidents. In addition, estimates of illnesses related to gender and age group also need to be developed.

Areas of Research-Karnataka Related Projects

A young primary care physician was frustrated with the job he was doing. One particularly distressful night he was called 12 times by a troubled woman who had 8 children. It was just one thing after another; there were colds, fevers, vomiting and pain. Just no end to the problems. One could have asked this young doctor whether it ever occurred to him that there was something else going on in the family that was upsetting everyone. Actually a careful enquiry revealed that the father had lost his job and was drinking heavily; there was no money and the mother did not know what to do. The children were receiving the desperate nonverbal messages from the parents; their immune systems were impaired allowing "germs/microbes" to wreak them harm by manifesting assorted physical illnesses.

*These are good hypotheses, however, they are not research. If such stories are to have any impact on medical practice, they require support with **CREDIBLE RESEARCH**.*

Research can contribute to our understanding of causality and this knowledge could serve as essential components of medical theory and practice that could be applied in many settings.

Priorities and aspirations for health care need to be looked at carefully. The critical question is *how should we start?* Of course, the first criterion for selecting any research problem is that it can be an important one. There is little justification for wasting time on unimportant matters. But how does one define important? Some of the researchable problems are listed in the table.

EXTENT OF THE PROBLEM	DISEASE BURDEN
Problems involving large numbers of people	Tuberculosis, Malaria, HIV/AIDS, Leprosy, Cancers
Many days in pain and/or suffering	Diabetes, Hypertension, Psychiatric disorders (schizophrenia, depression)
Many days lost from work or school	Occupational disorders, Allergy, and others

RESEARCH PROJECTS REQUIRING EXTENSIVE HUMAN AND MATERIAL RESOUCES AND MONEY	
1.	Socio-cultural
2.	Health Economics
3.	Public Health
4.	Sanitation
5.	Pollution
6.	Nutrition
7.	Special Groups (children, women, elderly, differently abled (disabilities))

Less common problems are also important in their origins which when better understood result in more effective prevention or resolution.

Potential Role of Epigenetic Phenomena

The potential role of epigenetic phenomena in modifying the substrate of many diseases provides additional support for the need to broaden our notions of causation. There is a need to incorporate vital information describing the circumstances surrounding the onset of each individual’s disease. There is no denying the fact about the outstanding success and effective interventions of modern medical practice. But if a broader model can accommodate a wider array of clinical and historical evidence and generate more enlightened understanding of illness, disease, and health, is it not preferable?

As with any hypothesis, however, acceptance is unlikely in the absence of credible research. Research is needed that will persuade the skeptics in the medical establishment that changes in the emphasis and content of medical education and scientific thinking, are fully warranted, if not long overdue.

Some of the research questions that need to be investigated at the primary care level are listed in the table.

TOPICS	PARAMETERS
ONSET CIRCUMSTANCES	<ol style="list-style-type: none"> 1. Situation surrounding initial signs/symptoms of patient's discomfort or illness 2. Location 3. Who was the patient with? 4. What was patient doing or thinking? 5. What was new or different? what did patient think and feel about it 6. What were other persons in the house, in the family, in the neighborhood doing or saying ? 7. What was the unspoken messages patient was receiving? Were there more or fewer messages than usual? Were they more or less intense and emotional?
CONCOMITANT FACTORS	Number of interacting or enforcing circumstances or encounters surrounding the onset of patient's discomfort or illness? Eg. job stress, weather, infection, etc.
PREDISPOSING FACTORS	<ol style="list-style-type: none"> 1. Genetic, family-related, cultural background 2. Belief system 3. Why me? What's patient's theory about the problem?
PRECIPITATION OF HELP-SEEKING	Events, comments, thoughts, or behavior triggering patient's decision to seek doctor's assistance at this precise time. What if anything changed? Why now? Why here?
THERAPEUTIC ENVIRONMENT	<p>Patient's feelings, perception, imagination, about behavior of doctor/nurse, technology procedures, medication, ambience of treatment setting?</p> <p>Characteristics, hallmarks, and reputation of the health care personnel, institution, system, or clinic?</p>

Alternative medicine

There is no systematic research effort in understanding the various indigenous health care systems like ayurveda, unani, siddha and others, and their contribution to the health care services. We don't know much about public perception and public faith in these systems. Do people have accessibility to health practitioners including ayurveda, Siddha, etc.? We should consider the usefulness and possibility of integrating the alternative systems of medicine in a decentralized system of health services.

Need for a Think Tank

Collaboration of physicians and biomedical scientists with immunologists, neuroscientists, psychiatrists, psychologists, epidemiologists, sociologists, clinical specialists, and other scientific colleagues is essential. Research designs

will require development of generic protocols, including survey instruments, that enable the reporting physicians to record categories of responses derived from conversations with each patient and probably one or more family members or friends.

Need for resources

In addition to a wide range of quantitative methods, a substantial armamentarium of qualitative research methods is available for use in primary care. Generation of adequate numbers – large numbers – for studies of each clinical entity and its explanatory patterns at the primary care level needs substantial networks of primary care practitioners/investigators who report to a central coordinating office.

The ultimate objective is to sensitize the health planners and policy makers about the need for preparation of research projects to analyze health problems thereby reduce the burden of disease on society. While we do all this, it is critical to assess the quality and robustness of the data with reference to different data sources.

To undertake such a complex endeavor the Government will need to allocate adequate budget and involve personnel from universities, health department, population center, state institute of training, medical colleges, professional associations, independent researchers and pharmaceutical industries.

Who will do the Research?

Karnataka has a large number of professionals and scientists and institutions that can carry out quality research of varying types and magnitude. The Rajiv Gandhi University of Health Sciences, with its more than 200 affiliated institutions, including academic centres (colleges in different disciplines), hospitals and field practice areas can certainly contribute a great deal to the research activities. The teaching (and non-teaching) staff can carry out quality research. The postgraduate students have to submit their thesis / dissertations. Their quality can be improved, with proper selection of the problem and guidance. The undergraduate students must also be encouraged to carry out project studies; they should be trained in research methodologies.

Considerable research can be done into the drugs used in the Indian Systems of Medicine and particularly Ayurveda.

Other Universities can also contribute to research on problems allied to health.

In the Health Department itself we have the Population Centre, which has been doing good research. The State Institute, the Vaccine Institute Bellary and other institutions can be developed to carry out pertinent research.

There are large specialised institutions like the National Institute of Mental Health and Neurosciences which are already doing considerable amount of research into problems of importance to the State, Kidwai Institute of Oncology is another important centre. Other institutions such as the Sanjay Gandhi Hospital and Accident Centre can be encouraged to carry out quality research.

Centres such as the Southern Centre for Occupational Health and the Malaria Research Centre, Bangalore, can carryout relevant research.

The State has a premier institution in the Indian Institute of Science. This can be of immense importance in carrying out fundamental and applied nature. Other institutions like the Institute for Social and Economic Change and the Indian Institute of Management can help in solving problems in the social, economic and management aspects of health and health services.

The Professional Associations can help in promoting relevant research.

Industries, including Information Technology and Pharmaceuticals and others, can help in research useful for improving the health of the people. Advances in Information Technology can be applied for improving health and health care.

Publication

It is important that the results of research be published. Controlled trials are the foundation of safe and effective health care. Research findings go unreported for a number of reasons:

- The researchers may think that the results are 'not interesting'
- Resources may not be available for report writing.
- Investigators may change their jobs and research may remain unfinished.
- Someone else might have published their results in the meanwhile on the same topic.
- Editors might have returned the reports for clarification or further work.

It is important that whatever be the reason, the research work should be published or at least presented to a suitable audience.

Summary:

Studies that incorporate responses of patients to various issues surrounding their illness are usually best done at the primary care level. This goes a long way toward understanding the issues related to causality. These research problems cry for deeper understanding. In order to ensure validity and acceptance by the policy makers the initial findings require replication with large numbers in diverse settings. Only then are the results likely to be incorporated widely in medical education and practice. Each problem deserves critical thought, careful refinement, and several pilot studies.

Health care can rise up to the expectation by internalising the clinical wisdom and undertake the serious investigation of important clinical problems. Research should be done in ways of promoting health involving a process of enabling people to increase control over them and to improve their health. The projects should reach and involve people through the context of their everyday lives where they live, work, learn and play. An organised effort in this direction will tell us how health promotion could be developed in the State scenario. In summary, there is a dire need to comprehensively examine and to evolve methodologies that may be adopted for health promotion in Karnataka.

Recommendations

- *Develop Vision, Mission and Strategy Statement on research at the primary health care level as also at the secondary and tertiary levels.*
- *Study the status of research projects (completed and ongoing) managed by the Department of Health and Family Welfare.*
- *Classify research programs into various categories such as:*
 - *Clinical Research – Drug Regimens*
 - *Public Health related problems (tuberculosis, leprosy, cancer, etc)*
 - *Karnataka-specific health problems, eg. Kyasanoor Forest Diseases; Handigodu Disease.*
 - *Sociology and Health*
 - *Life style and life style diseases: tobacco, alcohol, and others*
 - *Evolve programs in Health Economics*
 - *Research and integration of Alternative Systems of Medicine into Public Health Programs*
 - *Projects addressing delivery of health care, disparities due to gender, regional and socioeconomic issues*
 - *Epidemiological research- population demographics*
 - *Issues related to nutrition and its role in health and disease*
 - *Research on pollution-related health problems, management of health indices (IMR, MMR etc.), health promotion, etc.*
- *Set up a research board and a think tank to identify the problems. Invite experts to brainstorm, allocate funds and resources from Government (state and central), Universities, Indian Council of Research, Department of Science and Technology, ICMR, DST and Pharmaceutical Industries.*
- *Create infrastructure for digital library, information and documentation centre. Set up access to the Internet and databases. Make available leading research journals and publications.*

14. HEALTH SYSTEMS MANAGEMENT

*" God grant me the serenity
To accept the things I cannot change;
The courage to change the things I can;
And the wisdom to know the difference;"*

— Reinhold Niebuhr.

14.1 ADMINISTRATION

Introduction

The structure and management practices of the health system have to be such that they serve the purposes and meet the objectives of the system. The latter include providing comprehensive health care, including basic health services, of acceptable quality, optimum efficiency, easy accessibility and at reasonable cost. Such services have to be available at the primary and secondary levels, with particular emphasis on rural areas and the urban disadvantaged, the economically vulnerable, women and children and elders, supported by adequacy of tertiary care. A strong surveillance system and an efficient referral network would be essential elements. In particular, since the health services cannot be viewed in isolation, there should be a mechanism for inter-sectoral co ordination. The management system should be responsive to community needs and permit interaction with the latter.

The efficiency of the health services is dependent on two factors. The first would be the management of the services as an administrative structure, while the second would be the quality and adequacy of external but related aspects. The latter include quality of medical education, adequacy of funding and the recognition within government of the relative priority of health services, as indeed of the social services, in investment decisions.

This Chapter restricts itself to the **administration** and **management** of the health services as such. In view of their importance, the planning and the information components of the system are discussed separately. Certain aspects such as the management of drugs, training, regulation of the private sector in health services, and the like have, for more comprehensive treatment, been dealt with separately. Similarly, education of health professionals and health workers has been dealt with separately though it obviously has close links with the public health issues discussed here.

The health structure has been reviewed in a study ¹. The restructuring of the Department recommended here is indicated in Section I. Section II deals with some important general issues of administration.

Section I – Structure of Health Services

The current structure of health services has evolved over the years, with differing emphasis on the preventive and curative aspects at various points of time. There is a need for the reinstitution of a **strong public health** element in health services. This element, which was the foundation on which these services were instituted, has virtually disappeared due to changing approaches towards the content of these services, mainly from a preventive

¹ Review of Organisation Structure and Design of Job Responsibilities, Vols. I and II, A.L.Ferguson & Co. March 2001

approach to a curative approach. It is evident that even in current times the absence of the public health element has resulted in skewed services, de-emphasizing fundamental issues such as sanitation and prevention. What would seem essential is to reconstitute the system to have a fair balance between both preventive and curative approaches.

The proposed structure of health services is indicated in Annexure. The current posts have been redistributed / redesignated. For example, the Maintenance / Engineering Division now included in the Directorate is the transfer, in effect, of the one that is now part of the Karnataka Health Systems Development Project. Also, the posts at all levels have been redistributed. It is most unlikely that many new posts would have to be created.

The posts indicated herein do not include supporting staff. It would also be necessary to take into consideration the current levels and numbers in the professional cadres while putting in place the proposed structure with the revised positions and designations. Therefore, the following course of action would be necessary.

1. Listing out all the professional posts in the present structure and matching them with the new structure proposed to ensure that there have been no omissions. This would also provide a clear indication of the excess or deficit in some levels and indicate how the current posts could be redistributed. It would also assist in budgeting for the new structure more realistically;
2. Similar listing would have to be made for all supporting staff such as clerical, accounts, etc, and allocations to the extent necessary would have to be made;
3. Based on this exercise, orders would have to be issued adopting the new structure, with the revised placements and designations.

The following principles have been kept in view while considering the changes necessary to be made in the structure of health services:

1. The emphasis on Public Health should be revived and its essentiality recognized;
2. The Department would be designated as the Directorate of Health Services;
3. Separate cadres would be constituted for Public Health and Medical (clinical) responsibilities of the Department;
4. Common functions such as IEC and publicity, supplies and maintenance would be integrated to avoid duplication and lack of internal coordination;
5. The Divisions would be reorganized on the basis of integrated responsibilities and current needs;
6. The cadres should be reorganized so that all health personnel up to the district level form District Cadres, selection being the mode for filling up higher posts. The latter would constitute State Cadres.
7. The State Cadres would constitute the Karnataka Health Service.
8. The availability of services at PHC and taluk levels should be ensured through administrative means, including institution of special pay, a team at taluk level, etc;
9. All national programmes which now function in vertical fashion would be integrated into the system so that local supervision and management of these programmes at District level;
10. The structures for implementing Externally Aided Projects (EAP) would be built into the structure of the Directorate of Health Services, with a Director, EAP;
11. Discipline and control measures would be strengthened while, at the same time building up both expertise and morale through nurturing enhancement of skills and a transparent transfer policy;

12. There would be an Additional Director, under the Commissioner, in charge of the districts of Northern Karnataka.
13. An Additional District Health Officer would be appointed in the districts of Gulbarga and Belgaum in view of the size of the districts. Necessary numbers of Additional Programme Officer would also be appointed. These posts would continue till such time as the level of services is considered on par with the other districts.
14. A Commission on Health would be constituted as a mechanism for interaction with professionals and to assist in policy formulation.

The Directorate of Health Services is proposed to be made up of two wings. One would relate to Public Health and the other to Medical (clinical). The main elements would be:

1. The common direct recruitment point would be at the level of the PHC doctor. While the basic qualification would be MBBS, those with Post Graduate qualifications would also be eligible to be selected.
2. All newly recruited doctors would serve a minimum period in the PHC.
3. After this minimum period of service in the PHC –
 - a) Those with Medical (Clinical) Post Graduate qualifications would be assigned to the Medical Cadre;
 - b) Those with Public Health qualifications would be assigned to the Public Health Cadre;
 - c) Those with no Post Graduate qualifications may opt for either cadre, subject to acquiring the Post Graduate qualification necessary for that cadre within a stipulated period. The State would meet the costs for acquiring this qualification only for the first attempt and only for one subject.
 - d) Those who do not have Post Graduate qualifications and who do not wish to acquire these, would continue as PHC doctors permanently. Appropriate time scales would be worked out.
4. Vacancies in the posts of M.O. (PHC) could be filled by temporary appointments, till such time a direct recruitment is made.
5. Vacancies in the posts/cadres above the level of the MO(PHC) which cannot be filled by promotion due to non-availability of suitable officers with postgraduate qualifications, could be filled by appointment of persons on a temporary contract basis. Such persons would have to satisfy the stipulated conditions with regard to qualifications. Such appointments would be till such time as suitable internal candidates become available.
6. It is recognised that at a given point of time, there may not be sufficient number of officers with the necessary post graduate qualifications for promotion. In this event, it is recommended that the quota for inservice candidates for acquisition of postgraduate qualifications be enhanced to the extent necessary.

The choice of post-graduate course would be guided by the **needs** of the Directorate and not be based on the personal preferences of the officers.

7. Thereafter, promotions would be within these Cadres and no interchange would be permitted;
8. The Public Health and Medical Wings would consist of Divisions based on current needs. Each of these wings would be headed by a Director;
9. The overall management and coordination of the Directorate would be by the Commissioner or Director General of Health Services. This post would be filled by a senior officer of the IAS Cadre of the State or through contract appointment of an eminent health professional.

10. There would be independent Divisions directly under the Commissioner / Director General of Health Services for specialized functions. These would be (a) Director, Externally Aided Projects, (b) Director, Procurement and Maintenance, (c) Director, NGO Partnership Cell, (d) Additional Director, Planning, (d) Financial Adviser, (e) Joint Director for Special Groups and others as described in Annexure.
11. A Procurement and Maintenance Division would be established within the Directorate.
12. The posts of Divisional Joint Directors would be abolished.

The cadres, both Public Health and Medical, up to the District level would be District Cadres coming under the management of the Zilla Panchayat. The posts of District Health Officer, District Surgeon / District Medical Officer and equivalent posts would be excluded. The latter would form the first levels of the State Level Cadres.

Promotion to the first level State Cadre posts would be by **selection-cum-merit**. The posts of DHOs / DMOs would, in future be filled only by promotion by selection from among the Taluka level Health Officers. Selection procedures would have to be evolved by Government.

Karnataka Health Service

All posts that constitute the State level cadre could be constituted into a service called the "Karnataka Health Service". This would contribute to morale building and create a sense of common identity. The major advantage of constituting such a Service would be that young professionals would, through a process of selection, rise to occupy middle level management positions fairly early. This would ensure that officers with a reasonably long tenure would, in due course, hold senior positions so that stability in management is ensured at higher levels. Often, officers are promoted to senior positions when they have very short periods (a few months) of tenure remaining before they are due to retire. The possibility of ensuring that persons who are promoted to senior positions have at least two years of service remaining should be considered. If the remaining period of service is less, they may be continued in a parallel post as in the department of Engineering.

The main features of this Service would be as follows:

1. The Service would consist of all posts above the District Cadres and would include both the Public Health and Medical Cadres;
2. Posts in the Service would be filled through two methods:-
 - a. promotion from the District Cadres, as indicated earlier, on the basis of merit cum seniority; and
 - b. through a process of direct induction from the District Cadres.
3. Appropriate proportions of the posts of the State Cadre, in both Public Health and Medical Cadres, would be reserved for promotion and for induction from the District Cadres. It is recommended that this proportion be 50 per cent each;
4. The procedure for induction could consist of (a) a preliminary written examination to gauge professional knowledge and skills, followed by (b) interview. The selection process could be assigned to an appropriate authority, depending on the general principles of recruitment for this level of posts. Transparency would have to be ensured in the selection process;
5. All officers in the District Cadres who have the necessary qualifications and satisfy such other criteria as may be specified, including minimum period of experience, would be entitled to apply and compete for the posts reserved in the Health Service for recruitment through this method.

6. All officers appointed to the Karnataka Health Service will, on appointment, be trained in administration and management.
7. All further promotions within the Service would be on the basis of merit cum seniority;
8. In public interest, if officers who satisfy the stipulations of the Cadre and Recruitment Rules are not available for appointment to posts at any level in the Service, and for such time as they are not available, such posts may be filled by induction of suitable persons, with the stipulated qualifications, laterally, on contract basis.

District Cadre

The cadres, both Public Health and Medical, up to the District level would be District Cadres coming under the management of the Zilla Panchayat.

With the institution of Constitutional local governments at the village, taluka and district levels, it would be necessary to consider how, in the long run, social services, including health services, appropriate mechanisms could be established to ensure community participation and management of social services, including health services at the district level. It would be recalled that some decades ago there were District Development Boards which were in charge of local development under delegated authority. This historical experience would provide some guidance in formulation of a possible participatory structure at the district level.

All health services at all area levels are now departmentally organized and managed. The revised structure envisages all health services within a district being managed by the Zilla Panchayat. The health services assigned to the ZP would be those currently offered by PHCs (and Sub Centres), CHCs and Taluka Hospitals. All specialized institutions would continue to be under the Department.

Zilla Panchayat

In effect, the ZP, and at the lower area levels, the other panchayat organizations would be responsible for management of the health services in their local areas. The ZP would be the nodal agency and would oversee the working of these services in the talukas and at village level. Such an arrangement is already partly in existence, but what is envisaged in the revised structure is assigning full responsibility to the ZP and including all health services and programmes within the ambit of its responsibilities. It need hardly be mentioned that financial allocations commensurate with these responsibilities would have to be made, to that extent reducing the allocation to the Departmental budget.

The revised structure would imply that all posts of health and medical officers from the village level up to and including the district level, excluding all district level posts such as the DHO / DMO and equivalent, would be part of the establishment of the ZP. The recruitment, control, postings within the district and related matters would be entirely within the competence of the ZP. It must be emphasized that this would not at all mean the absence of Government control, supervision and monitoring. The ZPs would function within guidelines and other stipulations specified by Government with regard to all matters relating to health services. The DHO / DMO, as at present, would continue to represent Government. In effect, a distinct cadre of health personnel would have to be constituted for each district, with common features.

The elements of the health cadre in a district could be as follows:

1. The cadre would include all posts in the district from PHC level to District level, excluding the DHO / DMO and equivalent posts;

2. The recruitment to all posts of the district health cadre would be made according to rules stipulated by Government. Pay scales and C & R Rules would also be uniform. Recruitment would, as far as possible, be limited to persons from the district. This would eliminate the difficulty of filling rural posts.
3. The recruitment to the posts in the district cadre could be made either by:-
 - a) A District Recruitment Committee consisting of the Deputy Commissioner as Chairman, the members being the CEO of the ZP, Additional Director designated by the Director, the DHO and a prominent well known personality not from the same district to which recruitment is being made;
 - b) Or, through a Local Services Recruitment Board which would have to be established for this purpose through specific orders or legislation. It is recognized that this would be a general issue relevant to all other Departments that may constitute district cadres on the lines suggested here.
 - c) The level of posts coming under the purview of these recruiting organizations would need to be specified, keeping in view general orders of Government.
4. Appeals against findings in disciplinary cases or against punishment imposed by the CEO ZP, as Cadre Controlling Authority, would lie to the Directors concerned. Such appeals would not be permitted in cases of minor punishments such as censure and fine;
5. The CEO ZP would be responsible for ensuring that all persons in the district health cadre are trained. The State Institute of Health and Family Welfare would provide all training facilities.
6. Transfers from one district cadre to that of another would not normally be permitted. Transfers under special circumstances would be permitted under rules that would be framed for this purpose, and would be subject to the approval of the Director. In particular, such transfers should not confer any advantage with regard to relative seniorities among those eligible for promotion to the next level;

It is recognized that the structure suggested here is a radical departure from the current one. However, it has the merit of ensuring that local persons find employment within their districts, which would reduce the difficulty of filling rural posts. It would also mean that the community, through their elected bodies, takes full responsibility for the adequacy, accessibility and quality of the health services in their district. The Department would then be responsible for overseeing and monitoring of the health services and not have direct administrative responsibility for these services. Its energies would then be better spent in ensuring the efficiency and effectiveness of these services and setting standards through more intensive inspections and reviews.

It is evident that the adoption of this cadre structure would need basic changes in the C & R Rules, the mechanisms of financial allocations, monitoring systems and associated aspects.

Transitory Provisions

One of the major issues would be the treatment of personnel now in position. The following alternatives could be considered –

1. Present personnel at the appropriate levels could be given the choice to opt for induction into a particular district cadre, with no option to return to the departmental cadre later. Posts would, in this case, be reassigned to the districts with personnel. Those that do not so opt would continue on the departmental cadres as at present and the current system of postings continued.
2. As and when there are vacancies in posts up to the District level, these could be transferred to the ZP, with the financial allocation, as a first step in constituting the new cadre over time

3. All new vacancies could be assigned to the district cadre concerned and recruitment could be made as suggested earlier. Over time, the present departmental cadres at the district level would be phased out.

Commission on Health

The health services must be responsive to the expectations of the public and must meet current needs. The working of the Department should be transparent and the structure should be able to induct outside expertise as and when necessary for special studies or consultancies. It would be desirable to create a mechanism for general overseeing of the health system which would assist the Government and for providing policy inputs. The facility of lateral advice being tendered at the highest level would assist in ensuring both transparency and public confidence. For this purpose, it is recommended that a Commission on Health be established by Government consisting of both senior officers and non-official professionals.

Commission on Health	
Chairperson	Principal Secretary of Health and FW
Members	<ol style="list-style-type: none"> 1. Secretary (Medical Education) 2. Director of Health Services 3. Director of Medical Services 4. Director of Medical Education 5. Director, State Institute of Health and Family Welfare 6. Director, Indian Systems of Medicine and Homeopathy 7. Drugs Controller 8. Vice Chancellor, RGUHS 9. 8 to 10 eminent persons from professionals, NGOs and prominent persons
Member Secretary	Commissioner of H & FW

The Commission may co-opt experts or knowledgeable persons as and when necessary for specific purposes. Senior officers of the Department would also be invited to the meetings of the Commission to assist it. It is expected that decisions would be by consensus and that Government would normally accept the views and recommendations of the Commission. The duration of the Commission could be for a limited period to start with of about three to five years. If experience indicates that it has provided the support that the Department needs, its continuance could be considered.

The functions of the Commission would include:

1. Preparation of the Perspective Plan for health services;
2. Monitoring inter-sector issues and recommending corrective appropriate measures;
3. Monitoring implementation of Plan programmes, funded projects and Central Schemes and general management of health services;
4. Ensuring that public health is an important component of the health services;
5. Suggesting such studies or consultancies that are found to be necessary from time to time;
6. Reviewing all such aspects of health services as it may consider necessary for ensuring improvement of such services.

The Commission would not be concerned with the administration of the Department, or with disciplinary cases as such.

The Planning and Monitoring Division could serve as the secretariat of the Commission.

Section II – General Administrative Issues

Review and Amendment of Cadre and Recruitment Rules

The structure suggested would need considerable amendments to the existing Cadre and Recruitment Rules.

Recommendations have been made with regard to introducing mandatory tenures of service in rural areas and selection criteria being introduced for certain posts. Also, elsewhere in this Report, there are recommendations that have implications for the C & R Rules. It would, therefore, be necessary to review these rules to take into consideration the recommendations made herein and to bring them up to date. In particular, the rules should identify posts for which selection criteria should apply such as Joint Directors and above, introduce stipulations regarding tenure in rural postings for entitlement to confirmation / promotion. It is recommended that a Committee for Review of the C & R Rules be set up, with the Commissioner as Chairman, and the Director of Health Services, Joint Secretary, Health Department and a representative of the Law Department as members.

It is recommended that the new structure should be in place within the next one year, with recruitment and cadre choice to new recruits being as suggested above.

Annual Performance Reports

The present system of annual appraisal of performance would bear review. The formats used and the procedure both of recording and appeal would need to be evaluated so that they fully serve the purpose they are meant for such as selections to higher level posts, post graduate courses, special assignments and the like. The formats could include parameters regarding public satisfaction and other performance indicators. **Non-performance should be particularly noted and recorded.** The Committee suggested above could also do this.

In this context, the possibility of establishing a system of **medical audit** for the institutions should be considered.

Private Practice

Consideration of the issue of whether private practice by the medical personnel of the health system should be permitted or not has had a chequered history. At various points of time private practice has been permitted with periods of prohibition in between. Currently, it is banned. However, it is common knowledge that some of the medical personnel carry on private practice, often to the detriment of their official responsibilities. The question of whether private practice should be permitted or not is closely associated with the general issue of discipline in the health services. Conducting private practice when it is prohibited is both an act of indiscipline and corruption. However, the question of whether private practice should be permitted or not and, if so, at what levels, would need consideration from two points of view. The first is the need to ensure availability of medical services at all hours and the second is to ensure such services at local level, particularly in the rural areas. In other words, this issue is also part of the issue as to how to maximize medical services in the rural areas.

In principle, therefore, it would be reasonable to prohibit private practice. However for the imposition of such a ban must be accompanied by a reasonable enhancement of scales of pay which should at least partially reflect the opportunity cost of the private sector. It is, therefore, recommended that private practice should be banned, with reasonable enhancement of salary scale.

If for any reason this is not possible it is recommended that private practice be permitted subject to certain conditions as indicated below.

It is also recognized that in some posts private practice should be prohibited in order to ensure full availability of the services of the incumbents of these posts at all times. Keeping in view the circumstances that currently prevail, the following policy with regard to this issue is recommended:

- Hours of duty will be stipulated in all health / medical institutions of the Directorate and prominently displayed for public knowledge. The hours of work would take regional, seasonal and other factors into consideration. All personnel will be expected to adhere to these hours and the responsibility to ensure this would be that of the superior officer;
- Private practice would be allowed outside these stipulated duty hours and only when not on call, and when not needed to attend to emergencies, subject to the remission every month to Government of one-third the basic pay of the staff member who so practices;
- The Directorate would identify and notify those posts where private practice is banned, based on criteria to be evolved. The incumbents of these posts would be paid a monthly "non-practicing allowance" of one-third the basic pay of the post;
- All doctors in the Directorate, at all levels, would provide an affidavit at such periodic intervals as may be specified affirming whether they are or are not carrying on private practice. This would form part of the service record;
- Those found contravening the affidavit would be subject to punishments as may be prescribed in the relevant rules.

Corruption and enforcement of discipline

The prevalence of corruption in the health services is a serious issue. Corruption in any official agency is deplorable and must be eliminated. However, its presence in an essential social sector such as health is particularly obnoxious because it increases the costs of the services the public is entitled to and quite often determines both availability and quality of the services provided. It is pernicious and pervasive and operates at different levels in different manner. It could range from (a) demanding payment for services which are free or even paid for and for carrying out the legitimate duties of the personnel involved, (b) direct diversion of supplies meant for patients or from hospital supplies, (c) carrying on private practice when this is prohibited, (d) deliberately treating patients outside stipulated hours and charging personal fees for such services, and (e) diverting patients to private clinics with which one is associated and charging fees or obtaining commissions. In particular, corruption in government hospitals has a serious effect on the availability of medical services to the poor.

How to eliminate corruption?

That corruption exists, the various methods adopted in its practice and points at which it is practiced are well known. The issue is the mechanisms for its detection and elimination. The detection of corruption is dependent on the cooperation of the public and the internal mechanisms for this purpose. In this context, it is admittedly difficult for the public to complain of corruption in a situation where medical services are required because, unlike other official contacts, the need for these services cannot be postponed. However, the system should encourage complaints being received even after the event. Secondly, the consideration of complaints and completion of enquiry proceedings must be quick and thorough. The latter is particularly important to avoid enquiries being deemed as improperly conducted on procedural issues, as is quite often the case.

The current mechanisms inhibit quick enquiry. In particular, the procedures where major punishments are proposed to be imposed are complicated and invariably tend to delay enquiries beyond reasonable periods of time. It would, therefore, be vital for these procedures to be reviewed so that, without taking away constitutional rights to justice, enquiries could be completed within two to three months. It is recommended that the Commissioner of H & FW evaluate the current procedures to determine how they could be modified to ensure quick completion of enquiries.

In the majority of cases, under the current procedures, officers of a senior level are appointed as enquiry officers in individual cases. Such assignments are invariably viewed as an additional burden and given very low priority. There is rarely a sense of urgency and quite often enquiries have dragged on indefinitely. This results in a feeling of complacency in the corrupt that the system is incapable of dealing with them while, at the same time, reducing the morale of the honest and hardworking. The mechanisms for enquiry being within the Department would also seem to inhibit quick enquiry and strong action.

The enquiry into corruption cases, depending on the nature and content of the complaint, are either dealt with by the Vigilance Commissioner or within the Department by the appointment of an enquiry officer. There is, however, no institutional mechanism for detection of corruption. It is recommended that such a mechanism be set up on the lines similar to the Food Cell or Forest Cell. In the latter, a senior police officer on deputation is independently assigned the responsibility of follow up of complaints on corruption, carrying out test checks and the like. This cell should be preferably under the Principal Secretary or under the Commissioner for Health and not an adjunct of the DHS. The specific role and duties of the Cell could be defined. It should be empowered to investigate and take action against corruption and absenteeism. An appeal procedure would have to be provided but time limits must be fixed for disposal of such appeals. The details of the structure of the cell, its procedures etc would have to be considered by Government.

Depending on the gravity and nature of the offence, the enquiry could be entrusted to an appropriate enquiry officer. In this context the recommendations of the Karnataka Administrative Reforms Commission ² are supported.

The public should be aware of the services they are entitled to in the Sub Centres, the PHCs, at the Taluka and District levels and in Government Hospitals. Prominent boards should be put up indicating what services are free and the fees for services for which charges are levied. The officer who should be contacted if money is demanded should be indicated and an assurance held out that corruption charges would be investigated. The hospital Visitor system should be strengthened and one of the functions should be to enquire about harassment and demands of money, particularly from the poorer patients. Wide and constant publicity should also be made of measures taken promptly. All complaints of corruption should be acknowledged.

Centrally Funded Projects and integration of vertical programmes

A number of Centrally Sponsored Schemes have been implemented, at various points of time, as part of the successive Plans. These include programmes relating to control of blindness, malaria, AIDS, tuberculosis, leprosy and goitre, and enhancement of nutrition. The general principle of funding has been that for the Plan period these are funded either fully or partially by the Central Government, with the financing being taken over by the State at the end of the Plan period. There have, of course, been some exceptions to the latter.

² Page 102, Karnataka Administrative Reforms Commission, Interim Report, January 2001

The main issue is not so much the funding or the content of these schemes, since they all deal with important aspects of health services. It is the structural aspects that need consideration since separate hierarchies, with Programme Officers, were established under each such scheme for a specific purpose. This has created vertical hierarchies of a specialized nature within the Department. Also, it has complicated the reporting system by requiring different streams of reporting within the Department and to the Government of India. Such a structure does not lend itself to cost effective use of personnel or coordinated management of services. The difficulty of control and management of such separate vertical hierarchies for some activities is particularly noticeable at the district level. It is at this level that management and coordination need to be clear and effective. The relative seniorities between the DHO and the Programme Officers have added to the problems of coordination.

The vertical programmes must be reviewed to determine the mechanisms of eliminating the concept of independent vertical hierarchies, better utilization of the professionals in the Department, and establishing only one focal point of administration of personnel, management of services and reporting at the district level. It must be emphasized that this can be done without in anyway diminishing attention to these important programmes. As in most activities of the Department, designated officers would be responsible for specific activities. What is desirable is to eliminate vertical hierarchies that are under-utilized and give rise to loose administrative practices. Such integration is possible at all levels, including the senior posts at headquarters. It may, at this point be mentioned that a revised structure for the Department has been suggested later. The review of the vertical programmes would be part of this new structure.

Externally Aided Projects

There are a number of externally aided projects in operation in the State. In the health sector, the Karnataka Health Systems Development Project and the India Population Projects are the major externally funded projects. These projects deal with specific health issues and are not experimental in nature. They operate independent of the DHS though they are very much concerned with health issues in terms of objectives, structure and content. The management structure of these projects is independent of the DHS and so devised as to ensure efficient performance. Special officers are placed in charge of such projects, with officers of various specializations on deputation, and the induction of outside expertise is often assured through a system of appointment of consultants. Decision-making in these projects is expeditious because the high power Project Governing Board and the Standing Committee are delegated with full powers. The conventional system of seeking sanctions, administrative and financial, with many layers of official scrutiny and many departments to be consulted, is absent. There are no financial constraints and performance is intensively monitored by both external and internal agencies. In view of the structure and management independence, these projects are successful and appear as islands of excellence in governance of health services. The only constraint, which is unfortunately willingly accepted, is the mandatory conditionalities attached by the funding agency, specially in relation to operational and service concepts. Quite often, these do not coincide with the current department thinking or with ground realities either

These projects are successful because they have well-defined objectives, with leadership not generally available in other activities of government, selected competent staff and with operational independence. They provide lessons in management of the health services and innovative structures of delegation of authority and of monitoring

³ For example, it is an article of faith that institutional deliveries should be the norm in the IPP with a bias against home deliveries – against all realism in the rural areas and smaller towns.

and internal control and review systems. However, experience would indicate that once the project is over and the maintenance phase commences, the same performance levels rapidly disappear and the work gets “routinised”. While the projects definitely add to both assets and experience, there are fundamental issues that need to be considered if full and, more importantly, permanent advantages have to accrue to the health system from the implementation of such projects. These are (a) how one transplants the work culture of these projects into the larger, parent organization, namely the Health Department, (b) how the tempo and efficiency of the project implementation period could be sustained, (c) how the assets created are maintained for effective use, (d) how the human resources created could continue to be used effectively and productively and (e) how is adequate funding to be ensured for these purposes. In short, the issue is one of sustainability over time of both the organizational and professional advantages of these projects and building them into the culture of the department itself.

In considering these issues, it would be necessary to recall that the larger proportion of the funds for these projects is from the resources of the State. It is also important to remember that government departments can reasonably be expected to perform only at an optimum and acceptable level of efficiency, given the procedures, even if simplified, and large hierarchies and that “islands of excellence” are difficult to maintain over the long term.

Sustainability

The issue is essentially one of sustainability of the projects objectives and systems. It would be difficult to integrate the project structure in toto into the departmental structure at the end of the project period, nor would this be necessary. However, the main difficulty would be that the project leadership would no longer be available and the Director of Health Services would have been only generally associated with the project⁴. If integration of project activities in the maintenance phase has to be effective, it would be necessary to ensure that the project is built into and implemented within the departmental structure from the start. While a separate wing or division could be considered desirable because of the special needs of the project and the need to complete it within a fixed period, this wing / division should be a part of the Department; an exclusive project division within the Department should implement such a project. This would ensure that the Director is not merely involved in the project but is also responsible for its efficient implementation. It is recognized that this could limit the choice of officers for being appointed as project administrators but the Project Governing Board and the Steering Committee of the project should be able to enhance their supervision / monitoring to ensure effective implementation. Also, the Commission on Health, suggested as part of the restructuring of the Department, could also be empowered to monitor / review the implementation of the project. The present practice of establishing a separate but temporary project administration structure outside the Department should be given up and the special unit created for implementation of such projects should be placed within the department, even while maintaining its separate identity, with the appropriate structure and operational freedom, for expeditious and efficient completion of the project. The Director should be responsible for not merely fostering the work culture of the project but also for the spread of such a work culture in the other divisions of the Department.

⁴ The Director is on the Board and is well within his rights to insist on being kept informed about project activities. If this right were exercised, integration at the end of the project period would be easier. However, the involvement of the Director in project activities / monitoring has generally been minimal. This is a classic case of where the structural provisions are rendered non-operative by traditions of relationships between different official and power structures.

Transparency / morale building

The Department of Health Services is one of the larger administrative organizations of the State. Its importance both in terms of size and responsibilities dictate that the morale of the officers and staff should always be high. It should be managed in such a manner that administration is not accused either of favouritism or lack of direction. **Morale building** would depend on the personnel having a conviction of fair dealing in matters such as postings, selection for postgraduate courses, promotions and quick redressal of grievances. At present, unfortunately, there would appear to be no internal guidelines or traditions for many of these aspects.

Transfer Policy

Transfers are admittedly necessary in the department for manning vacant posts, on promotion or for other reasons. However, the system of routine transfers that are made every year has virtually deteriorated into a scramble for "good" postings or for postings in Bangalore, with pressures and pulls of all sorts having free play. In particular, it is most unfortunate that political pressures predominate. This works to the disadvantage of those who adhere to the rules or who have no political backing, and encourages indiscipline and inefficiency. It would be necessary to formulate and adopt a transfer policy under which the transfers would be **transparent** and **unassailable**. Towards this end, the following recommendations are made:

1. A transfer policy has to be evolved on the basis of well-defined criteria. The general principle should be that no transfers are necessary in what is essentially a service sector. In fact, unless there are compelling reasons, transfers in the current routine manner at periodic points seem unnecessary.
2. If transfers have to be made for compelling reasons the criteria could include – (a) a three to five year tenure in one post or place as a requirement for being considered for transfer, (b) a compulsory posting in a rural post / area, ensuring that positions in less favoured areas such as Northern Karnataka are particularly manned, (c) seniority and increased personal responsibilities guiding postings to urban areas, particularly Bangalore, subject to selection stipulations in the Cadre and Recruitment Rules for any particular post.
3. In making transfers care would have to be taken that there is no mis-match between qualifications / experience of the individual concerned and the requirements of the post;
4. A format of the personal and service particulars of the personnel should be developed which would contain all necessary particulars for application of the above criteria. These should be computerized and maintained both at the Secretariat and Department levels. The transfers could then be made on a transparent basis.
5. A committee chaired by the Commissioner for Health with the Additional / Joint Secretary in the Health Department and the DHS as members may recommend transfers, on the basis of the criteria indicated above.
6. Any pressure for choice of postings (except for authentic compassionate reasons) should be treated as an act of indiscipline and action taken.

The adoption of the procedures suggested above would go a long way towards ensuring both equity in postings and discipline in the hierarchy.

There are some cadres in which the vacancies to which direct recruitment have to be made are large. It would be advisable, in such cases, to stagger the direct recruitment over two or three years to avoid problems relating to career management or bunched retirements in future. Care should be exercised to ensure that there is no delay in filling up the vacancies.

The postings of personnel on OOD basis are often used as device to favour a particular person rather than to meet essential needs of the Department. This practice needs to be regulated. Therefore, the practice of postings of officers and staff on OOD should be kept to the minimum and restricted to essential requirements. This would ensure that postings based on individual preferences or to avoid transfers are minimized.

Selection for higher studies

The selection of in-service doctors for Post Graduate courses should be transparent and not made in a manner that favours individual members of the staff. It should be based on the needs of the Department for specific specializations and not on the preferences of the officers. It is recommended that the need for specializations be identified and selection be made on the basis of experience, seniority and capacity.

Regularisation of contract appointments

The Department has appointed a large number of doctors on a contract basis as MOs for the PHCs. They have continued on a fixed pay basis for some years now. It would be inequitable if they are replaced through direct recruitment and the Department also loses experienced personnel if this is done. It is recommended that the contract doctors be regularized, with due weightage being given to their years of service and inter-se seniority. This process of regularization may include a criterion of selection that takes into account the performance of the doctor. Such amendments to the C & R Rules as may be necessary may be processed quickly so as to expedite the process. It is also necessary to enhance the salary, if appointments on contract basis have to be continued.

Induction and reorientation training

Morale building includes training. A foundation training course on appointment that equips the recruit with the structure of the department and administrative and financial procedures would ensure better performance. Also, a public health orientation could be imparted at this early stage and a sense of pride of belonging to an essential service developed. Similarly, morale and honing of skills among middle level and senior officers should be built up through periodic in-service training, orientation courses and internal seminars / workshops. The State Institute for Health and Family Welfare could assume this role.

Delegation of duties and powers

Morale and functional efficiency are also dependent on the ability to exercise powers appropriate to each level in the hierarchy. Currently, there are orders delegating both administrative and financial powers to various levels. In particular, the powers of the senior officers are well defined to permit them to function with adequate independence. However, in practice, these powers do not seem to be exercised fully because traditions have been built up that favour centralization of decision-making or excessive caution operates in exercising them. This is reflected in complaints of inability to carry out adequate touring, delays in processing of even simple requisitions, etc. The adequacy of the delegations and, more importantly, the processes through which they are exercised would need review.

It is recommended that the Commissioner carry out a review of the administrative and financial powers delegations in the Department to –

1. evaluate their adequacy and determine if any further delegations are necessary; and
2. examine the procedures of exercising of the delegated powers to determine if there are any procedural factors that reduce their effective use.

Building up and sustaining morale would also depend on working conditions. The need for ensuring adequate facilities has been repeatedly stressed. Providing of transport and other facilities to the PHC doctors and other

personnel at the field level would need consideration. The measures that could be considered would include (a) providing soft loans for purchase of two wheelers or other transport and (b) house rent allowances where quarters are not provided.

General Issues

There is unfortunately no complete information on the various institutions within the Department from the Sub-Centres, PHCs, CHC, and upwards. There is no consistency in the figures reported on posts, vacancies, equipment available and condition of the equipment and the like. It is particularly distressing to note that even figures on the number of such institutions vary with the source. It is necessary to carry out a full survey, based on a well-structured questionnaire, to collect full information on these institutions. Such information would, when compared with specified norms of personnel and services, provide guidance in reorganizing the distribution of existing institutions or establishing new ones.

It is necessary to emphasize that in a "service" department such as health, vacancies and cuts in budget allocations operate against public interest. Such vacancies and cuts result in insufficient maintenance of assets created or deterioration in services that have been built up over time. It is strongly recommended that all vacancies in the Department be filled expeditiously and that no budget cuts be made in allocations.

Ensuring Overall Responsibility on Health Matters in Urban Areas

The administration of health services in urban areas is largely the responsibility of the local administrations such as the municipalities and Municipal Corporations. The staff in the larger cities are appointed and managed by the Corporations. While the administration of the services in these areas and the management of the staff would be the responsibility of the municipal body, it would be necessary to ensure that the Commissioner, the Director of Public Health and Director of Medical Services have overall responsibility for the technical aspects of these services so as to ensure quality and availability. The Directors should have the right of inspection and monitoring. Such general authority would be specially important in periods of outbreak of diseases and emergency situations. In particular, the public health aspects of urban areas, including water quality and the like, should be reviewed by the Director of Public Health.

A clear enunciation of the overall jurisdiction of the Directors over such services would be part of a Public Health Act, when enacted. Meanwhile, it could be stipulated by issue of administrative directions under the relevant municipal laws and / or suitable amendments to these laws. Information on the services in these urban areas should be built into the comprehensive information system that has been recommended in this report.

Inter-sectoral Coordination

It has been repeatedly emphasized in this report that health should not be viewed in isolation. While, for pragmatic administrative purposes, the DHS is in charge of health services, the success of the latter depends on the successful implementation of many other programmes. The latter include programmes relating to nutrition, sanitation and water supply, meeting minimum housing needs, literacy, transportation, communication, and the like. It is also dependent, in a larger sense, on social policies, as for example, raising the age of marriage of girls. More specifically, the health services are closely associated with the ICDS and school health programmes.

It is evident that health services would need to be coordinated with activities of the programmes referred to. Such coordination would be necessary both with regard to the relevant elements of these programmes and with the

implementing agencies. The establishment of an effective coordination mechanism would also ensure more optimum use of the funds invested in the health services and these programmes. The establishment of a high level mechanism for coordination would develop synergy among these activities. It is recommended that a High Power Coordination Committee be set up with the Development Commissioner as Chairperson, and members being the Commissioner of Health and FW, Director of Health Services, Principal Secretary and Director of Primary / Secondary Education, Principal Secretary, Woman and Child Welfare Department and Director ICDS, Principal Secretary Rural Development and Panchayati Raj, and officers in charge of rural water supply and sanitation programmes. Other officers could be co-opted if necessary. Representatives of prominent NGOs could also be inducted as members.

Similar coordination mechanisms must be established at the district and taluka levels.

Coordination with other institutions

There are autonomous specialty institutions, which include the Kidwai Memorial Institute of Oncology, Sri Jayadeva Institute of Cardiology, Sanjay Gandhi Accident Hospital and Research Institute, and others. Government is represented on the management of these institutions and, therefore, mechanisms are present for ensuring coordination. The links permit review of performance, monitoring of activities and also provide for an active role of intervention if necessary.

The representatives of Government are on the managements of the Central institutions such as NIMHANS and National Institute of Communicable Diseases. To this extent, interaction is provided for as part of the system.

Contracting out non-clinical services

The KHSDP has identified 28 non-clinical services, which could be performed by private sector agencies on contract. The advantages are obvious. Large number of staff need not be on the permanent payroll of government. Services are likely to be performed better because penalty clauses could be enforced, which would not be easy in the case of government employees. It would allow more time and effort to be invested in health and medical issues. It is recommended that this system of contracting out non-clinical services could be extended to as many hospitals as possible.

In the context, the view that general services cannot be contracted out under the laws relating to abolition of contract labour would seem to be of doubtful validity. In the arrangement contemplated, the contract would be with service firms and not individuals.

Improving Registration of Births and Deaths

The importance of improving the system of registration of births and deaths cannot be overemphasized. The data provided by the system, if complete in coverage and valid in recorded information, would provide information at regional, sub-regional and micro level on health parameters.

The placement of the system of reporting would seem to need consideration. Currently, it is monitored by the Director of the Bureau of Economic and Statistics, with a network of notifiers and registrars at the field level. The latter are revenue officials. The system merits a review for its reorganization and vitalization. It is recommended that this be examined in consultation of the Departments involved. The Government of India would also have to be consulted at the final stages.

Recommendations

SECTION I – Structure of Health Services

- *The emphasis on public health should be revived and its essentiality recognized; two separate cadres may be constituted relating to Public Health and Medical (clinical). The Department would be designated as the Directorate of Health Services;*
- *The Directorate would be in charge of a Commissioner / Director General of Health Services. This post would be filled by a senior IAS Officer of the State Cadre or through contract appointment of an eminent health professional;*
- *The Divisions would need to be reorganized on the basis of integrated and common functions, to avoid duplication and lack of coordination;*

The restructuring may be made as indicated above and described in Annexure;

- *All State level posts may be constituted into the “Karnataka Health Service”. The Service would include both the Public Health and Medical Cadres. The posts in the Service would be filled fifty per cent through a process of selection on the basis of merit-cum-seniority from the senior officers of the district cadres, and the other fifty per cent would be filled through a process of selection consisting of both tests and interviews from among all the officers of the District Cadre, subject to criteria of qualifications and other parameters. A small portion may be through open selection. The principles on which it would be constituted and the procedures for selection from District Cadres could be as indicated herein.*

All further promotions within the Service would be on the basis of merit cum seniority;

In public interest, if officers who satisfy the stipulations of the Cadre and Recruitment Rules are not available for appointment to posts at any level in the Service, and for such time as they are not available, such posts may be filled by induction of suitable persons laterally, on contract basis.

- *The levels of health personnel up to the district level should constitute district cadres, selection to State cadres being made from these cadres on the basis of merit cum seniority;*
- *Appropriate transitory mechanisms for exercise of options by the present staff to the reconstituted cadres would have to be adopted, on the lines suggested above;*
- *A suitable recruitment mechanism should be established for appointment of doctors at the basic level. This could be either a District Recruitment Committee or a State level Local Services Recruitment Board, depending on the level / grades of staff to be recruited;*
- *Recruitment would be at the level of the PHC, assignment to the Public Health or Medical Cadres being made after a certain period and subject to qualifications as specified;*
- *A Taluka Health Team under the Taluka Health Officer may be constituted which includes the Block Health Educators, Senior Health Inspector, the Refractionist and the Senior Lady Health Visitor;*
- *The DHO and the DMO would be designated as the district health chiefs and be made responsible for all concerned activities in the district;*
- *A Commission on Health may be constituted as a mechanism for interaction with professionals and to assist in policy formulation;*

SECTION II – General Administrative Issues

- *The restructuring of the health services would call for amendment of the Cadre and Recruitment Rules and for consideration of the transitory arrangements. A Committee with the Commissioner as Chairman should be set up for this purpose, with a mandate to complete the process in a specified time so that the new structure is in position in a year's time;*
- *The present system of annual appraisal reports needs to be reviewed and made performance specific. Also, a system of medical audit should be instituted for assessing performance of hospitals;*
- *It is recommended that private practice be banned, with reasonable enhancement of scales of pay. However if this is not feasible, it is recommended that private practice by health personnel be allowed subject to the following conditions:*
 - a) *Hours of duty will be stipulated in all health / medical institutions of the Directorate and prominently displayed for public knowledge. The hours of work would take regional, seasonal and other factors into consideration. All personnel are expected to adhere to these hours and the responsibility to ensure this would be that of the superior officer;*
 - b) *Private practice would be allowed outside these stipulated duty hours and only when not on call or when not required for emergencies, subject to the remission every month to Government of one-third the basic pay of the staff member who so practices;*
 - c) *The Directorate would identify and notify those posts where private practice is banned, based on criteria to be evolved. The incumbents of these posts would be paid a monthly "non-practicing allowance" of one-third the basic pay of the post;*
 - d) *All doctors in the Directorate, at all levels, would provide an affidavit at such periodic intervals as may be specified affirming whether they are or are not carrying on private practice. This would form part of the service record. Those found contravening the affidavit would be subject to punishments as may be prescribed in the relevant rules.*
- *Internal institutional mechanisms for detection of and enquiry in cases of corruption should be set up for expeditious detection and punishment;*
- *All externally aided projects would be within the structure of the Department, even if implemented by a distinct Division within the Department, as suggested in the restructuring of the Department;*
- *Morale needs to be built up by adoption of transparent procedures with regard to transfers, selection for training or courses, regularization of contract doctors, providing soft loans for transport to PHC doctors and field personnel and the like. The orders relating to delegation of powers, both financial and administrative, need review. The Commissioner may carry out such a review;*
- *All vacancies should be filled expeditiously. Vacancies in a "service" Department results in serious reduction of quality and availability of health facilities;*
- *Budget cuts for health services should not be made since these not only reduce the scale of the services but also result in deterioration of existing ones due to low maintenance and enhancement. Such cuts are counter productive;*

- *It is necessary to extend the technical authority of the Director, Public Health / Director, Medical over health matters in urban areas that are under the control of the municipal authorities. This could be done through the issue of orders under the existing Municipal Acts.*
- *It is recommended that a Public Health Act based on the Model Public Health Act, GOI, with suitable modifications, be considered for the above and other purposes;*
Inter-sectoral coordination should be ensured. For this purpose a Committee should be constituted as suggested;
- *The existing mechanisms should be used effectively to monitor and interact with the specialty institutions, including the Central ones;*
- *The possibility of contracting out non-clinical services in increasing degree should be explored;*
- *The Population Centre may be redesignated as the Centre for Population and Health Research, and its role expanded. It may be placed under the Principal Secretary;*
- *The system of registration of births and deaths needs to be reviewed to enhance its accuracy, coverage and utility.*

ANNEXURE

PROPOSED ORGANISATIONAL STRUCTURE OF THE DEPARTMENT OF HEALTH AND FAMILY WELFARE, KARNATAKA

I. Organization Structure at the District

Sub-Centre

The sub-centres will continue to have the existing structure with the Female Health Worker and the Male Health Worker carrying out the functions of registering the cases of pregnant women, administering immunisation dosage and attending to minor ailments and first aids and refer to PHC, the cases beyond their competence. These personnel will report to the Medical Officer at the respective PHC.

- Junior Health Worker – Female (ANM) for 3,000 to 5,000 population
- Tribal ANMs for Sub-Centres in Tribal Areas.
- ANMs will be assisted by Dais, Anganwadi Workers and Village Health Workers.
- Junior Health Worker – Male: for every two subcentres or for every Gram Panchayat.

Primary Health Centre

The PHC will have two Medical officers - one lady medical officer and male medical officer. The senior amongst them will be the administrative head. These medical officers will have a team of one Staff nurse, Pharmacist, Junior and Senior Health Assistants – Male and Female, a Lab Technician and related support staff. All these staff report to the Administrative Medical Officer.

A study, leading to rational re-organisation of PHC and attached sub centres may be made in view of the wide variations in the population and area covered by the present PHCs and sub centres.

Community Health Centre

A composite primary health care concept will now consist of one CHC with 3-4 PHC's. The specialists of the CHC will assist the PHC Staff in the execution of public health activities under the guidance and monitoring of the Taluk Health Officer. The routine clinical work of the specialists at the CHC will be monitored by the AMO of the CHC.

Taluka Level

- The distinction between Public Health and Medical is initiated at the Taluk level. Each of the two streams will have their own infrastructure and will draw upon the other's resources in terms of consultation and expertise. Thus, the medical specialists will primarily be responsible for providing clinical care to the patients of the hospital and the public health specialists will be involved in implementation of the various health programs initiated by the DHS. The common seniority list of PHC entry level will have to be reworked with 2 independent seniority lists of Medical and Public Health.
- In the medical wing, the specialists will look after curative work. A CHC / Taluka hospital will be headed by the Administrative Medical Officer (AMO). Among the seniors of the AMO's of the Taluk, there will be a Taluk Medical Officer (promotional post) who will supervise, monitor and evaluate all the CHC's and Taluk Hospital.

- The Taluk Health Officer (THO) will head the public health wing of the Taluka and will have Public Health officers and program officers, assisting him to carry out various national and state health programmes. These are monitored by district programme officers who in turn report to Zilla Parishat (administratively) and DHOs & concerned JDs (functionally). THO must have a public health PG qualification (atleast DPH). He will be assisted by Taluk Health assistants (promoted Senior HAs from the PHC level), Block Health Educators, Assistant Statistical Officers for HMIS, Refractionist and clerical staff.

District Level

- The District hospital will conduct the functions of clinical service. The district hospital is headed by RMO / District Surgeon / Superintendent depending upon the number of beds in the hospital and its affiliation to a Medical College and supported by specialists and other staff. The district office will also have a post of the District Medical Officer (DMO) who will look after all hospitals (CHC's and TLH/DH) in the district. The DMO is a promotional post and he will be the senior-most specialist with managerial/administrative qualifications and experiences. This cadre is equivalent to the District Surgeon. The senior most programme Officer becomes the DHO. PG qualifications in public health is must for this post. He must have additional managerial/ administrative qualifications and experience.
- A detailed work motion study may be carried out for the DHO and in depth analysis be carried out about his time utilisation. Based on this report a necessary GO in Consultation with the ZP authorities to be framed permitting the DHO to attend only the most important meetings. Programme Officers at District level to be given more autonomy (financial and administrative) with technical directions from the DHO. These officers should be accountable financially also for their respective programmes to the ZP. Presently only DHO operates all the financial matters. A joint account of Programme Officer with another ZP official to use the programme funds effectively could be considered.
- The DHO, which is a promotional selection post, will be assisted by an ADHO who will be the senior most programme Officer. ADHO will supervise and monitor the health programmes, prepare district health plans and monitor HMIS.
- The Gulbarga and Belgaum Districts will have 2 DHO's each in view of the large size of the District and number of PHC's. The Additional DHO will be assisted by 5 to 6 programme officers each.
- The following Programme Officers will report to the ADHO for smooth functioning at the District level: a) District Leprosy Officer with STD/HIV b) Health Promotion with 2 Officers (one for nutrition – new post and other for health education – District Health Education Officer) c) Reproductive and Child Health d) Family Welfare Officer e) Vector Borne Diseases f) TB Officer g) Blindness Control Officer. Programme Officers for urban health and STD/HIV can be added later as and when these programmes are launched.
- The District Surveillance Officer with his staff will be responsible for the disease surveillance in the district. Both the DHO and DMO will be responsible for an efficient surveillance system of communicable diseases and referral systems respectively in their areas of operations. The DHO and DMO will be trained in applying epidemiological skills for micro level planning to the dynamic and changing health scenario both at the public health & hospital level. The units constituting the services would, for administrative purposes, be placed under the DHO.
- The district laboratory, District Medical Store, district maintenance unit and district health management information units will be jointly shared by DHO and DMO.

- Though the District Health Officer and District Medical Officer / District Surgeon belong to state cadre, they have to work closely as officers of the Zilla Parishat.
- The DMO will be a promotional selection post. His office will be located within the District Hospital. The Medical Suptd. (earlier DS) of the District hospital, all the Administrative Medical Officers of the CHC / Taluk and other hospitals in the district will report to the DMO. The DMO will monitor the quality of care in all the hospitals in the district. The Program Officers for Ophthalmology and NCD will also report to the DMO. Presently there will be a separate program officer for Ophthalmology to supervise the cataract surgeries and a combined Program Officer for CVS / Diabetes/ Mental Health / Oncology of the rank of senior specialist till these programs are launched as independent programs with funds allocation. The physician at the District hospital will monitor the TB Centre in the District hospital in coordination with the DTO. Training in public health and program management will be given to all Program Officers. The DMO will also have a maintenance unit of civil, equipment and vehicles under him. *(The reorganisation charts of the proposed district level structure are enclosed at the end of the Annexure)*

II. Organisation at the State

The Directorate of Health Services will be headed by Commissioner / Directorate General of Health Services (DGHS), who will report to the Principal Secretary. *(The reorganisation charts of the proposed structure at the state level is enclosed at the end of the Annexure)*

Commissioner / Director General of Health Services

The main function of the Commissioner of Health Services / Directorate of Health and Family Welfare Services would be to bring about better internal and inter-sector co-ordination and to achieve a greater degree of accountability in health services both in financial and administrative terms. The key activities of this post are:

- Monitoring, supervising and implementing all National and State health and family welfare programmes in the State
- Ensuring co-ordination among the various directorates and divisions within the Health system and also with related departments

The post would be filled through direct recruitment, through a process of selection from the open market. Officers of the Karnataka Health Services would also be eligible to be considered. The post would be held on contract basis for specified period.

In the event that direct recruitment of a suitable health professional is not possible, the post may be filled temporarily by a senior IAS officer of the State cadre.

Reporting Structure to Commissioner/DGHS:

The Commissioner/DGHS will have the following functional heads reporting to him / her:

- Director – Medical
- Director – Public Health
- Director – External Aided Projects
- Director – Procurement and Maintenance
- NGO Partnership Cell

- AD – Planning
- AD – North Karnataka
- CAOs (Administration I & II, Finance and Surveillance)

This division of work among the key functions of Commissioner / DGHS keeps in view the dynamic nature of the work and effective monitoring of the activities. The structure and functions of the office of each Director's office are indicated below:

Public Health Vs Medical

Continuing the proposal for two main cadres namely Public Health and Medical at the District level, it is proposed to have a similar structure at the Directorate. Thus, the key preventive, promotive and curative functions of the Directorate of Health are divided among two directors, i.e. Director – Medical (for curative and clinical services) and Director – Public Health (Preventive and promotive services). This will ensure equal commitment from the Directorate to the District for both Public Health as well as Medical. Further, it will provide focused supervision in each of the areas. It will also address the promotional opportunity to each cadre to be their respective Directors.

Director – Medical

This functionary heads the clinical and curative services of the Directorate of Health. The Director – Medical is reported to by two ADs, namely, AD – Medical and AD – NCD.

AD-Medical: The AD- Medical currently exists in the KHSDP and due to need for integration between externally aided projects and the DHFWS, it has been brought under Director – Medical. The AD – Medical will look after the Hospital and Hospital management aspects in the Directorate. He will ensure that a proper referral mechanism is in place in the state to ensure speedy treatment at various levels of hospital care. This post will be assisted by the following JDs:

- JD – Medical
- JD – Hospital
- JD – Pharma

The JD – Hospital is a new post created for focused supervision of hospitals under the DHFWS. The JD (GMS) has been re-named to JD (Pharma) with emphasis on distribution of drugs and pharmaceuticals. The detailed reporting relationships and duties and responsibilities of the above are provided in Volume II of this report.

AD-NCD: To bring about greater emphasis and co-ordination in identification and treatment of Non-communicable diseases, it is proposed to have an AD post who would look after non-communicable diseases like Cancer, Ophthalmology, Diabetes, etc. In addition, it is proposed to have the following JD posts reporting to the AD-NCD:

- Joint Director – Ophthalmology
- Joint Director – NCD (Cardiovascular and Diabetology)
- Joint Director – Emergency Medicine / Traumatology
- Joint Director – Mental Health
- Joint Director – Oncology
- Joint Director – Dental Health

Recent studies of Murray & Lopez: WHO and other reports – NIMHANS, AIIMS, NCAER etc) have shown the rising incidence of NCD cases. This will necessitate that the Dept of Health have senior officers of the rank of JD's in each of these specialities to monitor the identification, curative, preventive and promotive aspects of the NCD's. Taking into consideration the future requirements of Health care delivery, it is proposed to have focussed attention in these areas. The various JDs will primarily be responsible for the curative and research aspects of these specialisations. The detailed reporting relationships and duties and responsibilities of the above are provided in Volume II of this report.

Director – Public Health:

The Director –Public Health will be overall in-charge of the Public Health development in the State of Karnataka. He/She will utilize his/her resources for effective implementation of the various National and State level public health programmes. He/She will be assisted by the following ADs:

- AD - RCH / Primary Health
- AD – Health Promotion
- AD – CMD
- AD – AIDS

AD -RCH is an existing post and will continue to perform the current key functions. He/She will be assisted by the JD – RCH. He/She will also look after Primary Health Care which is essentially a part of RCH and assisted by JD – PHC.

AD – Health Promotion: The current AD (HET) is renamed as AD – Health Promotion and will handle the functions of Information, Education and Communication (IEC) along with other health promotional activities. He/She will be assisted by the following JDs:

- JD – IEC
- JD – Nutrition (new post)

JD (IEC) currently is under AD (RCH). As the main function of the JD (IEC) relate to communication of health related programs to the public it is proposed to re-locate this post to be under AD – Health Promotion. Thus, bringing all health communication activities under a single head will facilitate higher level of integration and maximum utilization of resources.

AD – CMD is re-located from the KHSDP and will supervise the activities of various national and state programs relating to vector borne diseases, TB, Leprosy as well as the Vaccine Institute and the Laboratory. Each of the above functions are managed by the Joint Directors. He will be nodal officer for the State Surveillance Unit; the detailed job description is in Vol. II of the report. The JDs reporting to AD- CMD are:

- JD -Vector Borne
- JD – TB
- JD – Leprosy
- JD – Vaccine Institute
- JD - Laboratories

The JD (Vector Borne) post is renamed from JD – Malaria & Filariasis with the scope to incorporate additional vector borne diseases.

AD – North Karnataka

In view of the existing backwardness in the districts specified in terms of the medical & public health standards, there is a need for focused attention on the development of this region. It is proposed to have a post namely AD – North Karnataka, held by a senior person with exposure to both public health (programme management) as well clinical, reporting directly to the Commissioner/DGHS.

The key role of this post will be to monitor the activities at Bijapur, Raichur, Gulbarga, Belgaum, Bidar, Bagalkot, Bellary, Koppal, and Gadag districts, acting as a nodal office for all the activities of DHS. He/She acts as a coordinator between different functionaries in the department and also liaison with the Directorate on behalf of the districts mentioned.

AD - Planning and Monitoring

The need for integration of planning at the Directorate Level necessitates a post of AD - Planning (reporting directly to Commissioner / DGHS). This post replaces the existing Strategic planning Cell and will take up the activities of long-term, short-term and perspective planning for the department, with the inputs from different national and international agencies as well as the Management Information Systems (MIS) functionary of the department. He/She will monitor the changing epidemiological profile, the burden of disease, recommend cost effective measures to achieve best use of limited resources. Also carry out studies on a continuous basis and interpret, analyse trends initiate policy initiatives for reform and change. Will also review the annual plans, five-year plans and MMR. Will edit the annual report of the department. He/She will be assisted by the following personnel:

- JD -MIS
- JD -Planning

The JD –MIS will be the nodal point for all information relating to the DHFWS. He/She will collate information from all medical, hospital and public health functionaries in the department and interprets for any inferences or corrective actions. The bureau of health intelligence, demography cell and all statistical units in some divisions will function under the JD (MIS).

The JD (Planning) will be the nodal Officer for preparation of annual plans, five-year plans and annual report of the department. Details of JD's are in volume II of the report.

DD (Law & Ethics and Forensic Medicine) will be the nodal point for all aspects of Law, Ethics and Forensic Medicine.

Director – External Aided Projects

The various operations of the Externally Aided Projects is proposed to be conducted in the main stream of the DHS. However, a need was felt to introduce a functionary reporting to the Commissioner/DGHS to oversee the management of these projects and to handle any co-ordination with external agencies, if any. The Director – EAP will have the following key functions:

- Monitor all the existing External Aided Projects, if needed by having different reporting authority for each. He/She has the overall responsibility for the financial accountability of the Projects
- Identify new areas of collaboration with other agencies and bring them to reality.
- Work in close association with mainline department in carrying forward the objectives of all External Aided Projects with a programme mode of approach rather than a project mode.

Director – Procurement and Maintenance

In the current structure, the procurement and maintenance of various equipment and civil works are distributed across the various departments. It is proposed to centralize these activities by creating a separate cell reporting to the Commissioner/DGHS. It is proposed to place an IAS person in charge of this Division. He/She will be assisted by the following people:

- JD – Procurement
- JD – Equipment & Maintenance (Bio-Medical)
- Chief Engineer – Civil

JD – Procurement's key functions include receiving the indent for any equipment from all respective functionaries in the department about their requirement, placing tenders for acquiring those equipment and finally acquiring them from the most feasible bidder. The person to hold this position can be one with engineering/logistics background since it involves appraising of tender documents, acquiring equipment and supplying to the destined location. He should be well versed in all the procurement procedures of World Bank and other funding agencies.

JD – Equipment and Maintenance (Bio-Medical) takes care of all the machinery and equipment including the vehicles of Directorate of Health Services. He will be assisted by

- DD – Equipment
- DD – Equipment (training)
- DD – Transport

These posts are already existing under KHSDP and same to be transferred to the Directorate of Health and Family Welfare.

Chief Engineer – Civil has functional reporting to the Secretary – PWD and administrative relationship to the Commissioner through Director – Procurement. He is in charge of all the civil related construction and maintenance work of the Directorate of Health services. He appraises the tenders for construction and allots the work to the eligible persons. He is assisted by

- Superintendent Engineer – Civil
- Dy. Chief Architect

NGO Partnership Cell

NGO participation in Health Care has become very essential at levels of Public Health Care and first referral. These need to be supported and encouraged with special focus esp. in the backward and remote region of the State. A number of NGO are registered with the Health Department under various schemes and various programmes. It is important that all NGO's have a single source of interaction, coordination with the Health Department. It will also enable the Government to monitor and evaluate the activities of the various NGOs participating with the Health Department. Hence it is suggested to have a NGO Partnership Cell as a single window in the department headed preferably by an Advisor/ Consultant to coordinate the activities of this cell with the Commissioner/ DGHS to simplify procedures for Grant-in-Aid avoiding delays.

Joint Director (Special Groups)

A new post needs to be created to cater to the problems of women (gender sensitivity, Tribals, Elderly and the Disabled). He/She will report directly to the Commissioner / DGHS and coordinate with other departments and sectors.

Director of ISM&H

For the purpose of better co-ordination between the Director of ISM&H and Directorate of Health Services, it has to be brought under the Commissioner. The Medical Education component of the Department of ISM&H will be supervised by the Secretary, Medical Education.

Drugs Control Department

Drugs Control Department will be reporting the Principal Secretary directly.

Centre for Population and Health Research (Population Centre)

The Population Centre, which currently carries out studies on the State's demography and also conducts evaluation studies, is under the Principal Secretary, Health. It is expected to meet current needs of projections and evaluations and generally provide professional inputs that are independent of the Directorate. It is an organisation with professional expertise and serves a very useful purpose. Its reports provide valuable inputs for mid-course corrections, for evaluation and policy formulation. Its continuance and strengthening would be desirable.

The Centre could, with advantage, be located as a wing under the Principal Secretary. This would also enable its expertise being available to the Commission on Health that has been suggested as an advisory body. To reflect its true functions, it could be designated as the Centre for Population and Health Research and its role reassessed / expanded

Director – State Institute of Health and Family Welfare (SIHFW)

Currently, he is a functionary reporting to Project Director – IPP – IX. It is proposed that henceforth he will head the training function of the department and SIHFW, which will be a autonomous and report functionally to the Principal Secretary of Health. The hierarchy of the proposed structure of the office of Director SIHFW includes:

- JD
- DD
- District Training Officers or other training personnel involved in training in Health & Family Welfare throughout the state

Medical Education

The Secretary, Medical Education will consult the Principal Secretary, Health regarding policy matters. The Director, Medical Education will coordinate with Commissioner. The staff on deputation from the health department to the Medical Education Department will be under the Administrative control of Medical Education Department.

CHART NO. 1

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE: PROPOSED

DISTRICT LEVEL

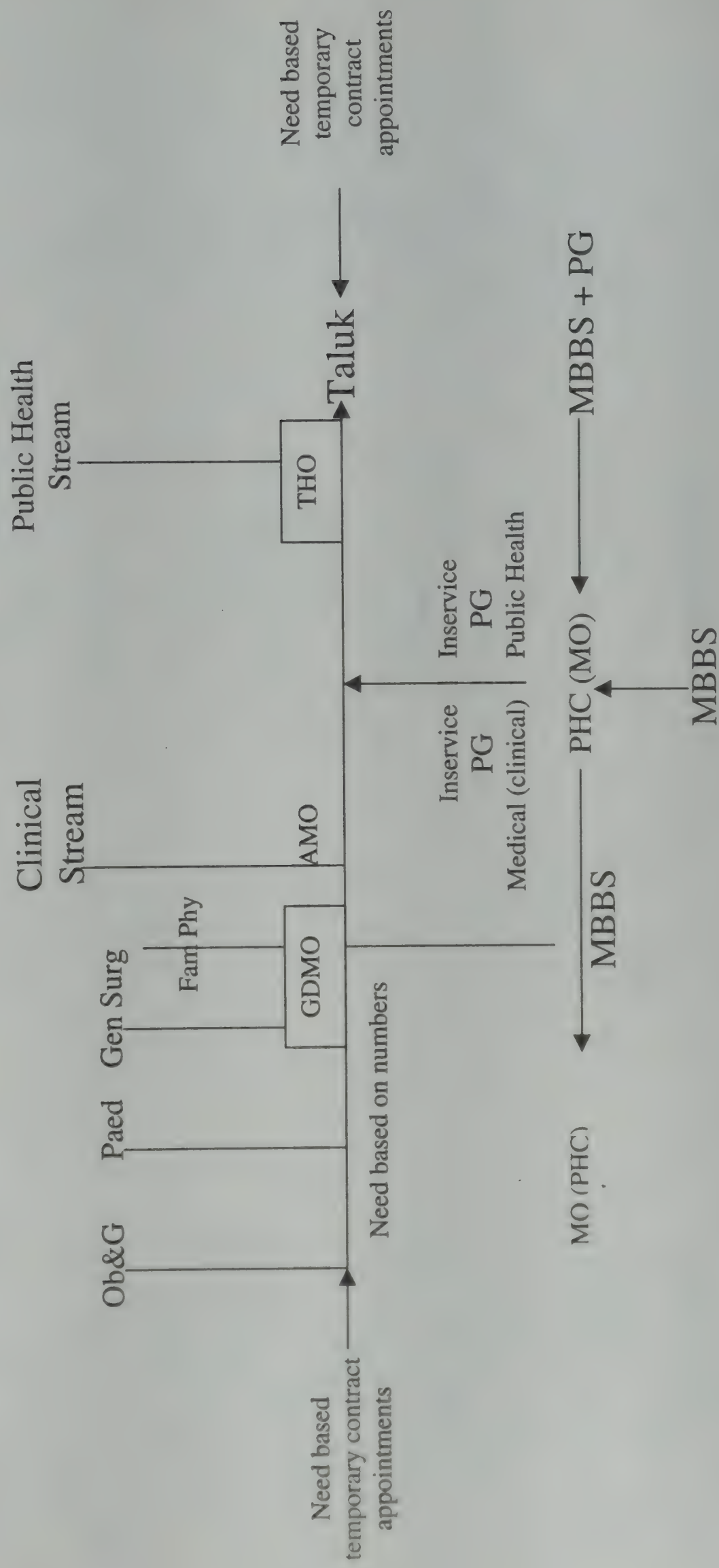


CHART NO.2

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE: PROPOSED
DISTRICT LEVEL

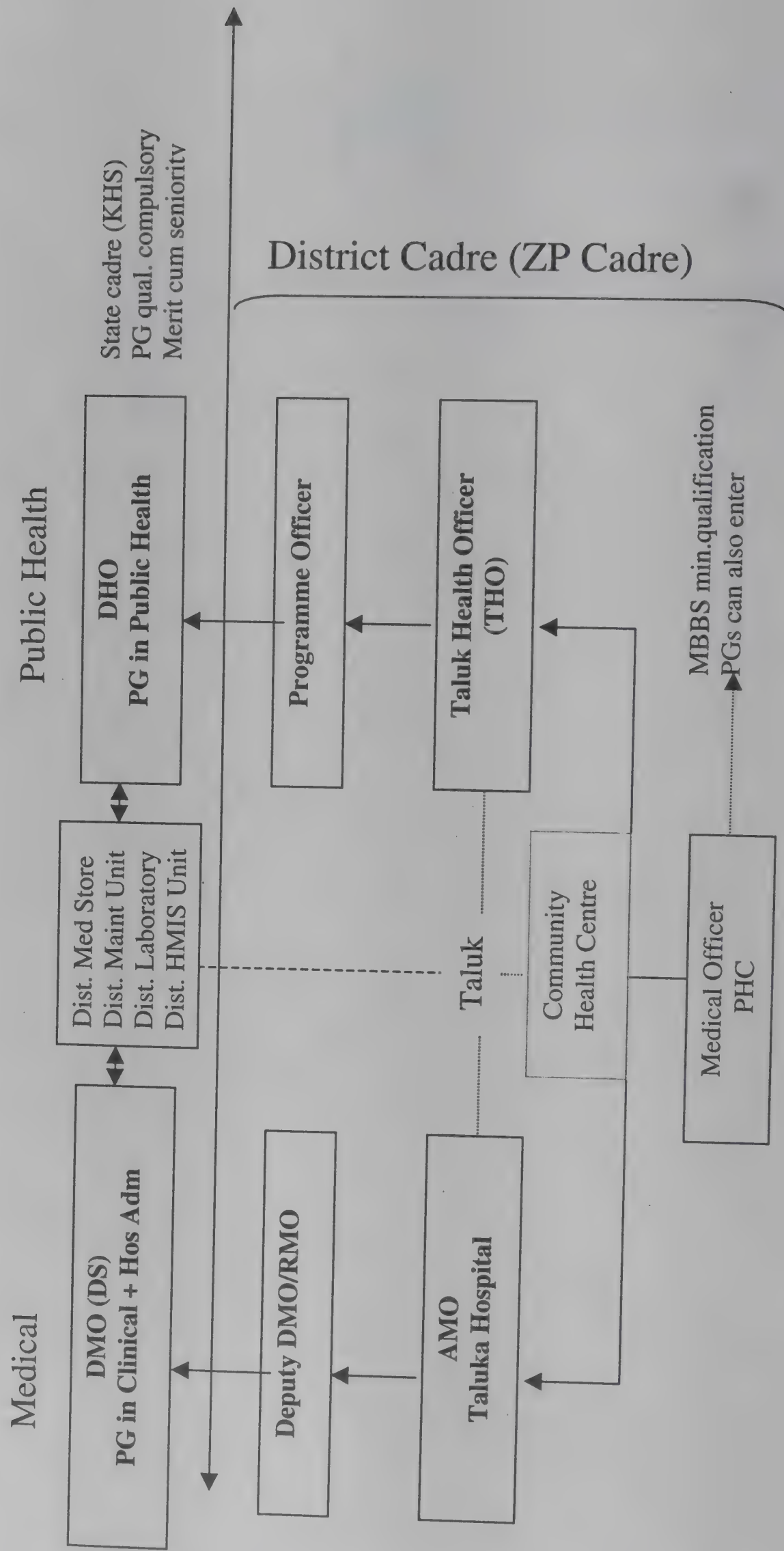
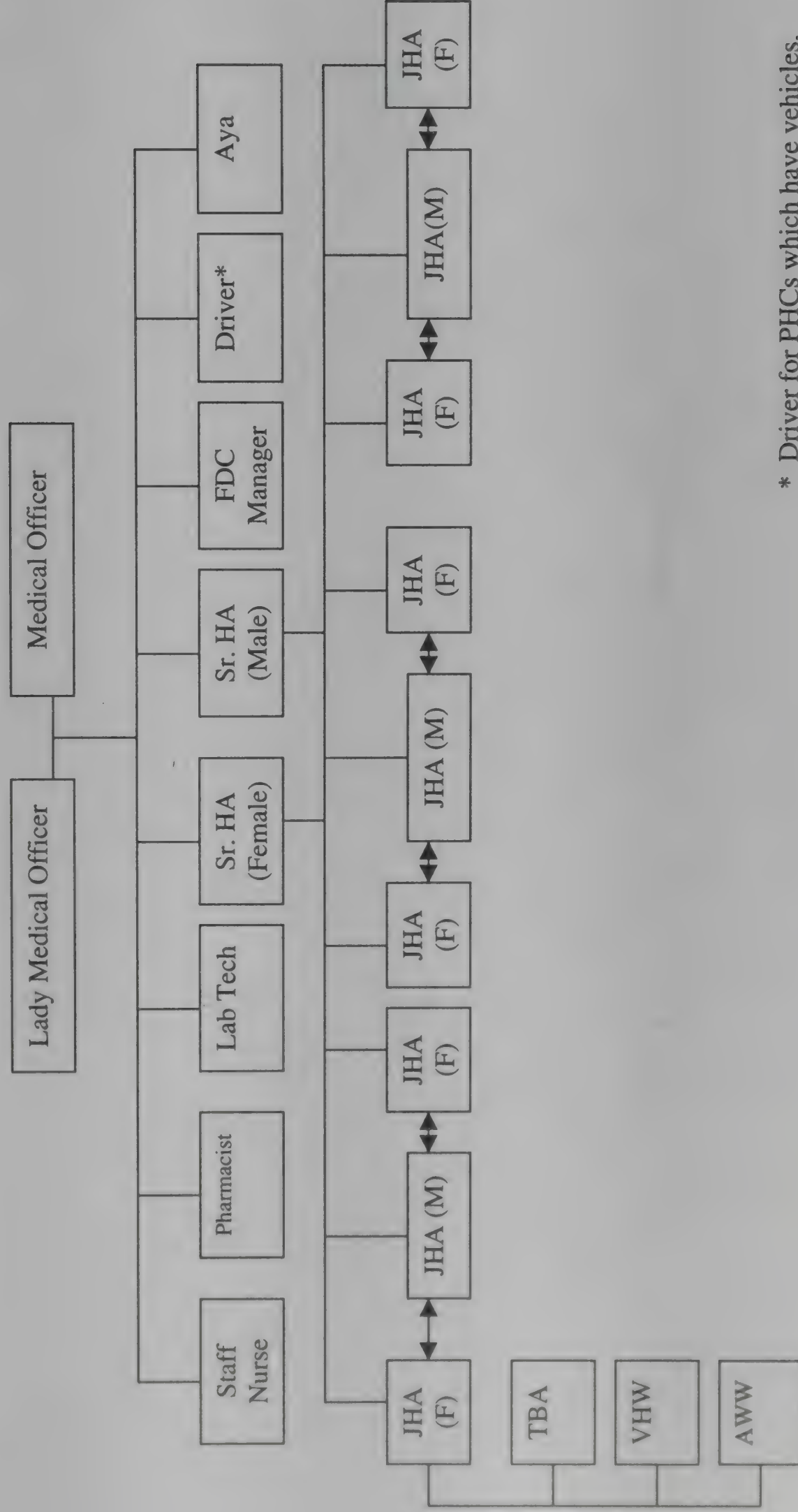


CHART NO. 3

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE: PROPOSED

DISTRICT LEVEL

STRUCTURE OF PRIMARY HEALTH CENTRE



* Driver for PHCs which have vehicles.

CHART NO. 4

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE : PROPOSED

DISTRICT LEVEL

TALUK HEALTH OFFICE - PROPOSED

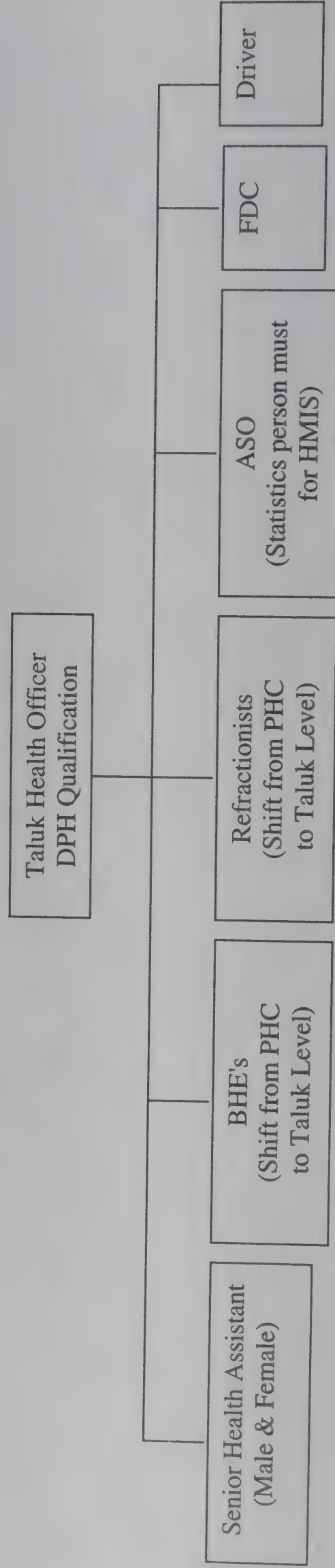


CHART NO. 5

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE : PROPOSED

DISTRICT LEVEL

STRUCTURE AT DISTRICT HEALTH OFFICE

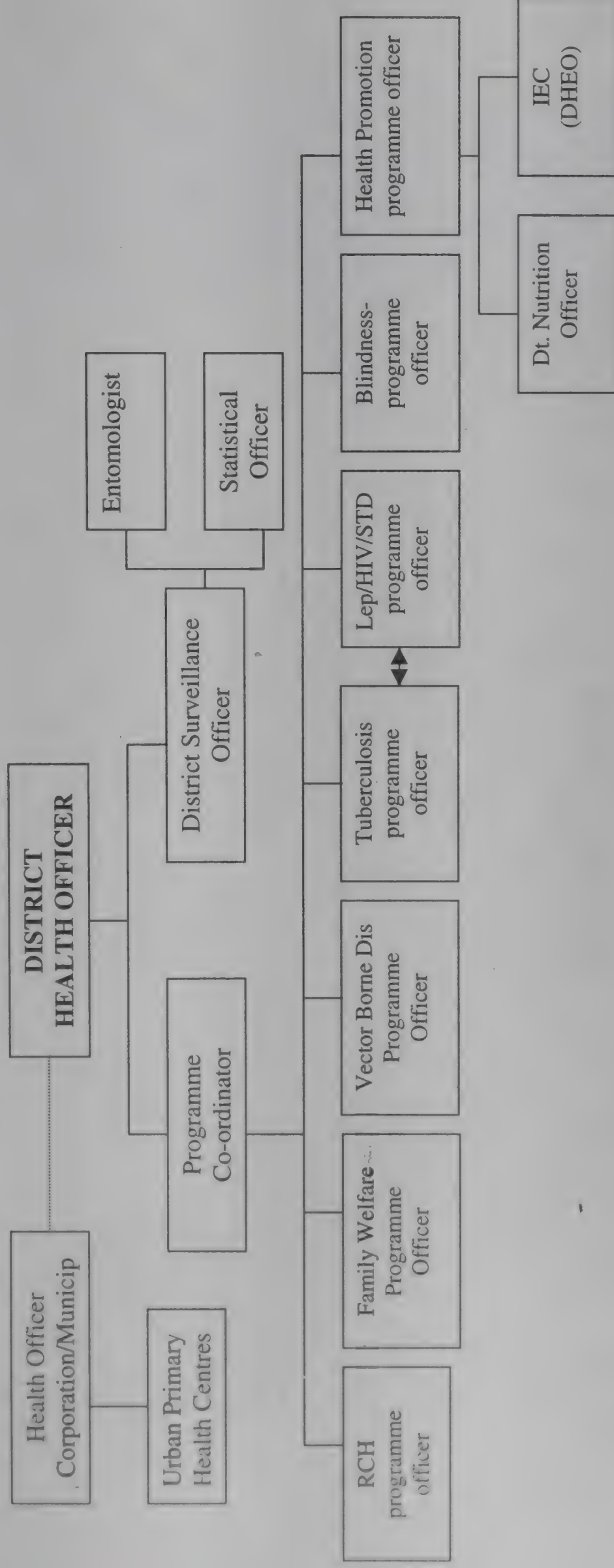


CHART NO. 6

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE: PROPOSED

DISTRICT LEVEL

STRUCTURE AT DISTRICT MEDICAL OFFICE

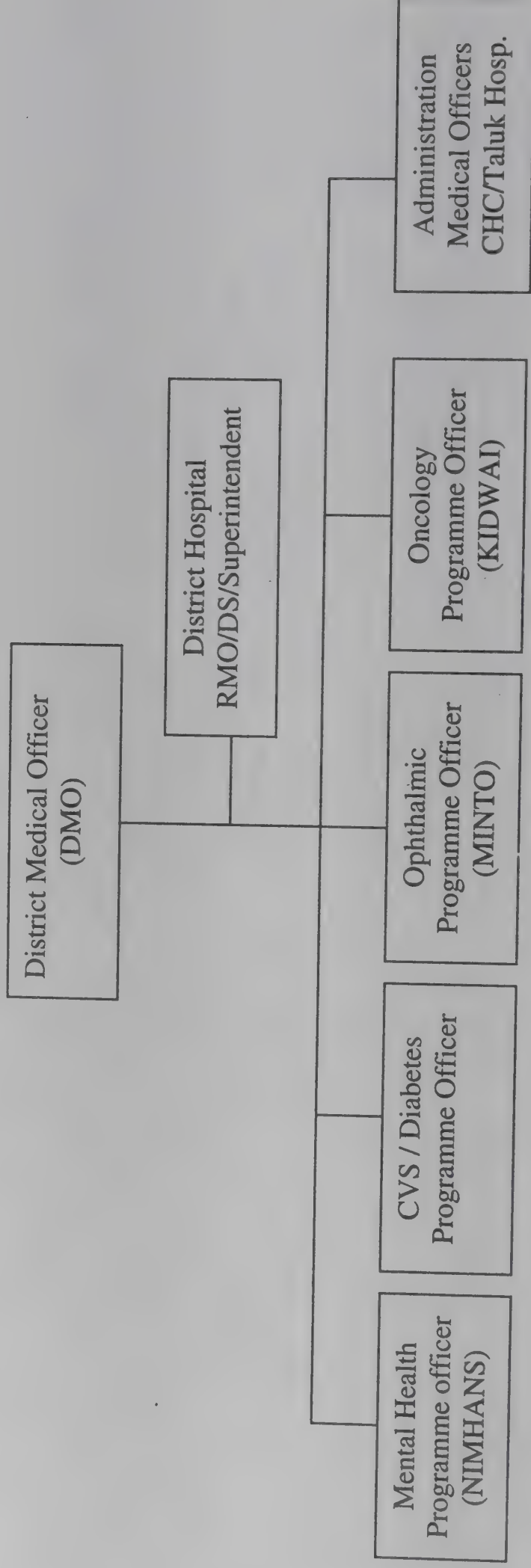


CHART NO. 7

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE: PROPOSED

DISTRICT LEVEL

STRUCTURE AT DISTRICT HEALTH OFFICES – DHO & DMO

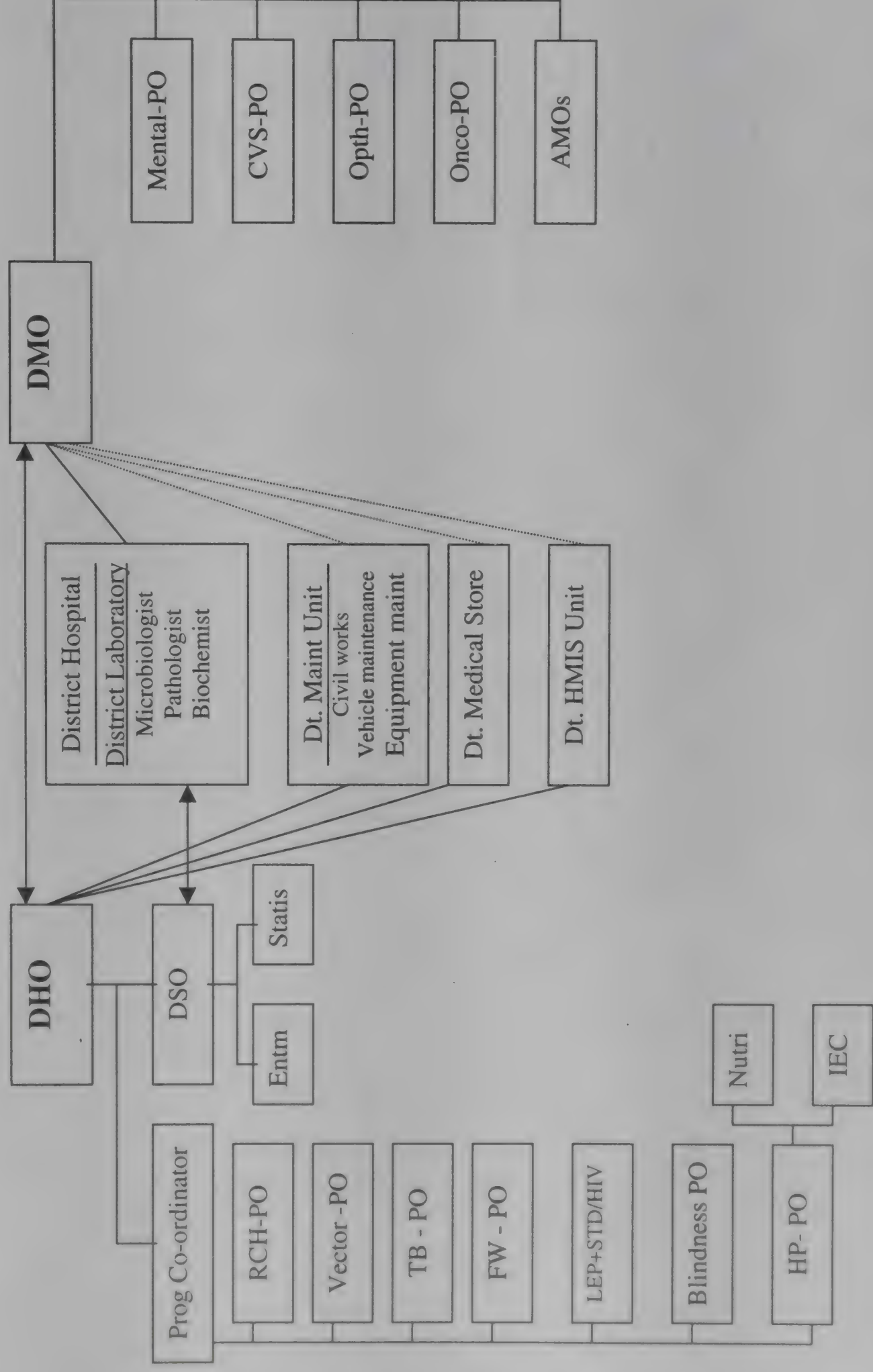


CHART NO. 8

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE: PROPOSED

STATE LEVEL

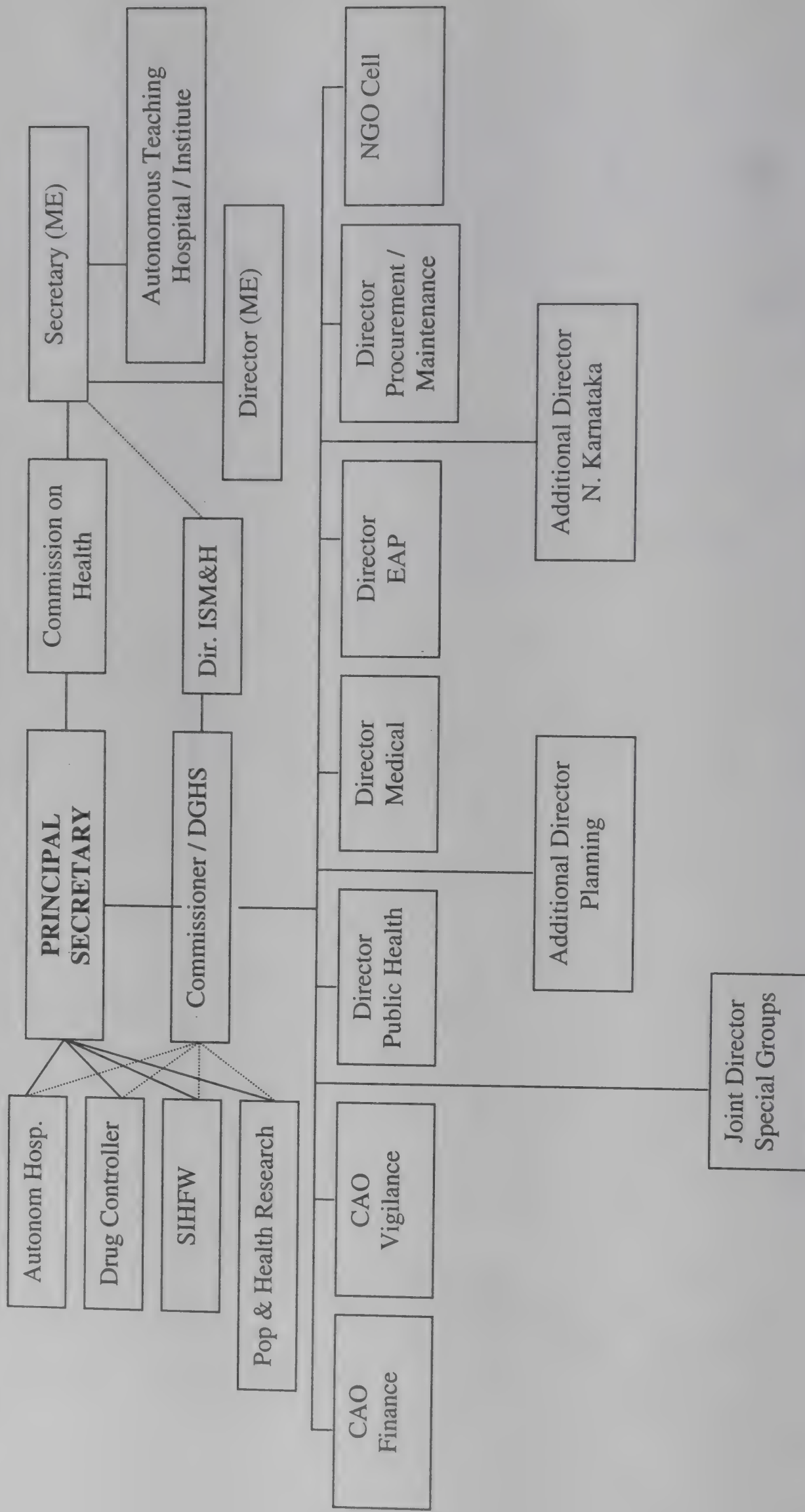


CHART NO. 9

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE: PROPOSED

STATE LEVEL

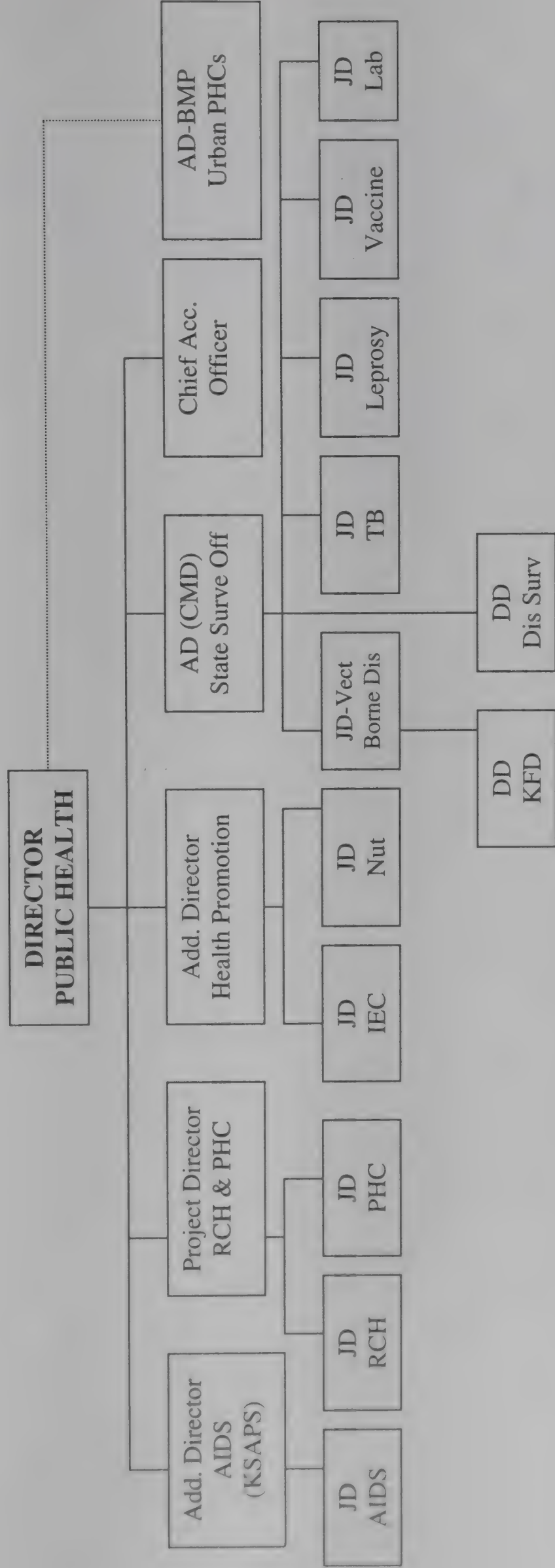


CHART NO. 10

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE : PROPOSED

STATE LEVEL

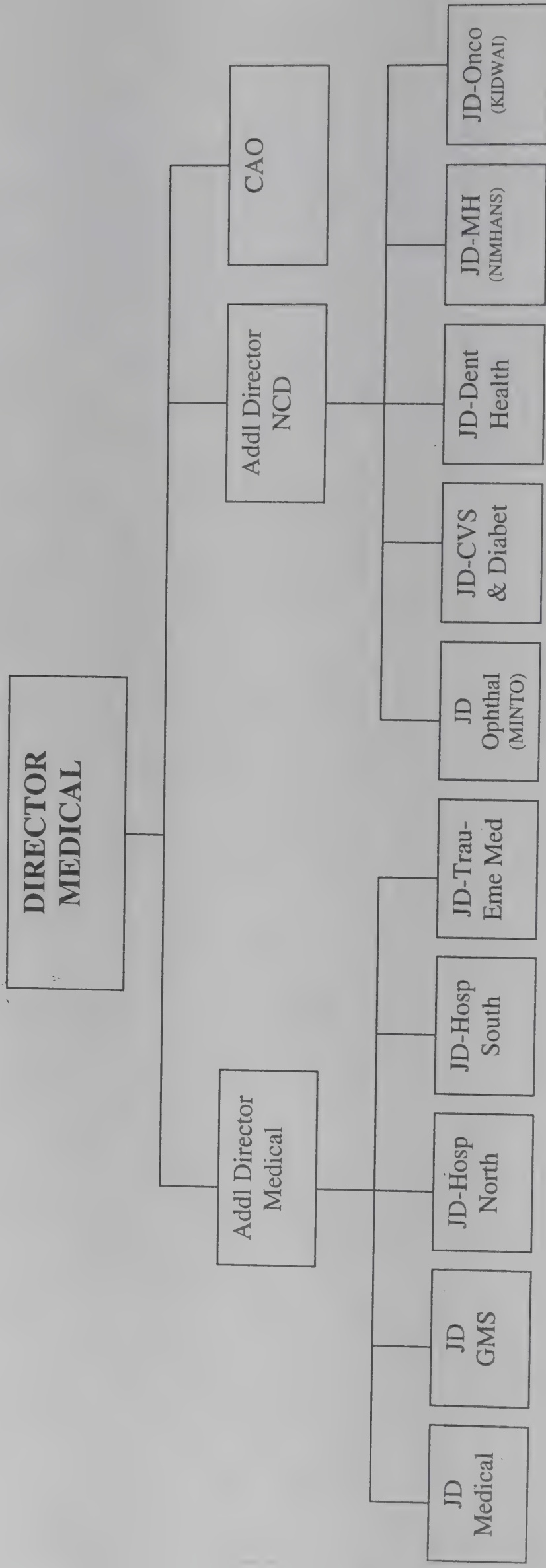


CHART NO. 11

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE : PROPOSED

STATE LEVEL

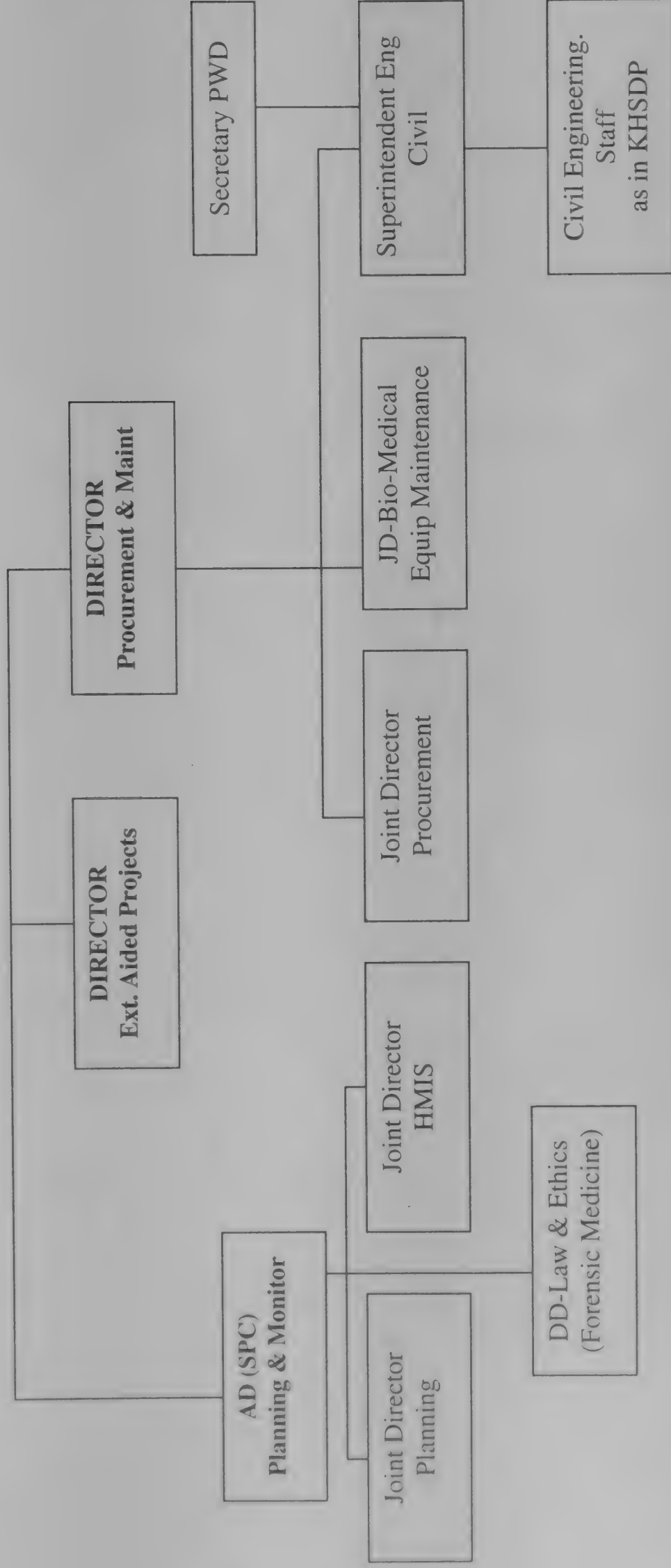


CHART NO. 12

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE: PROPOSED

DIRECTORATE OF ISM&H

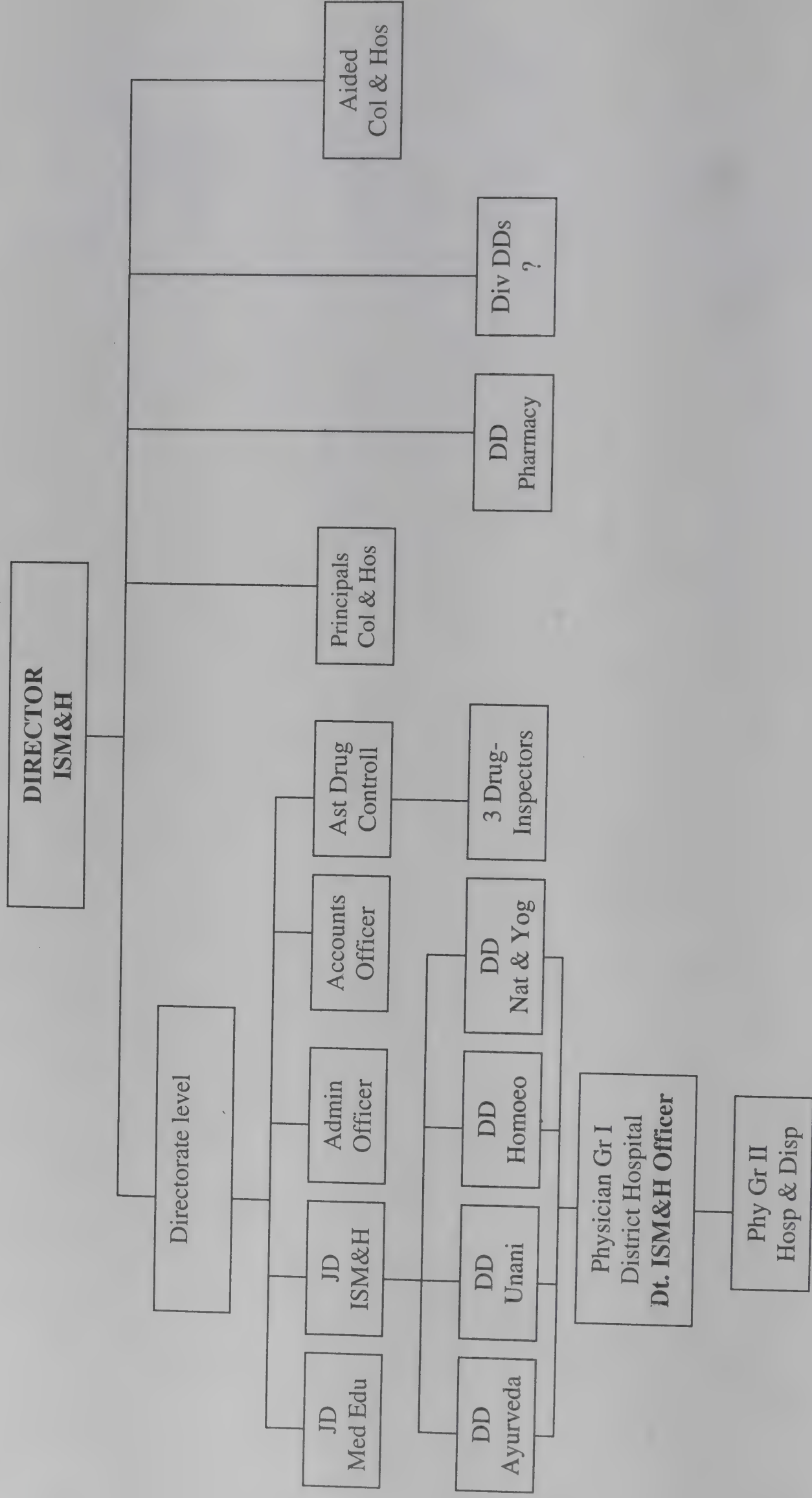


CHART NO. 13

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE : PROPOSED
STATE INSTITUTE OF HEALTH AND FAMILY WELFARE (AUTONOMOUS)

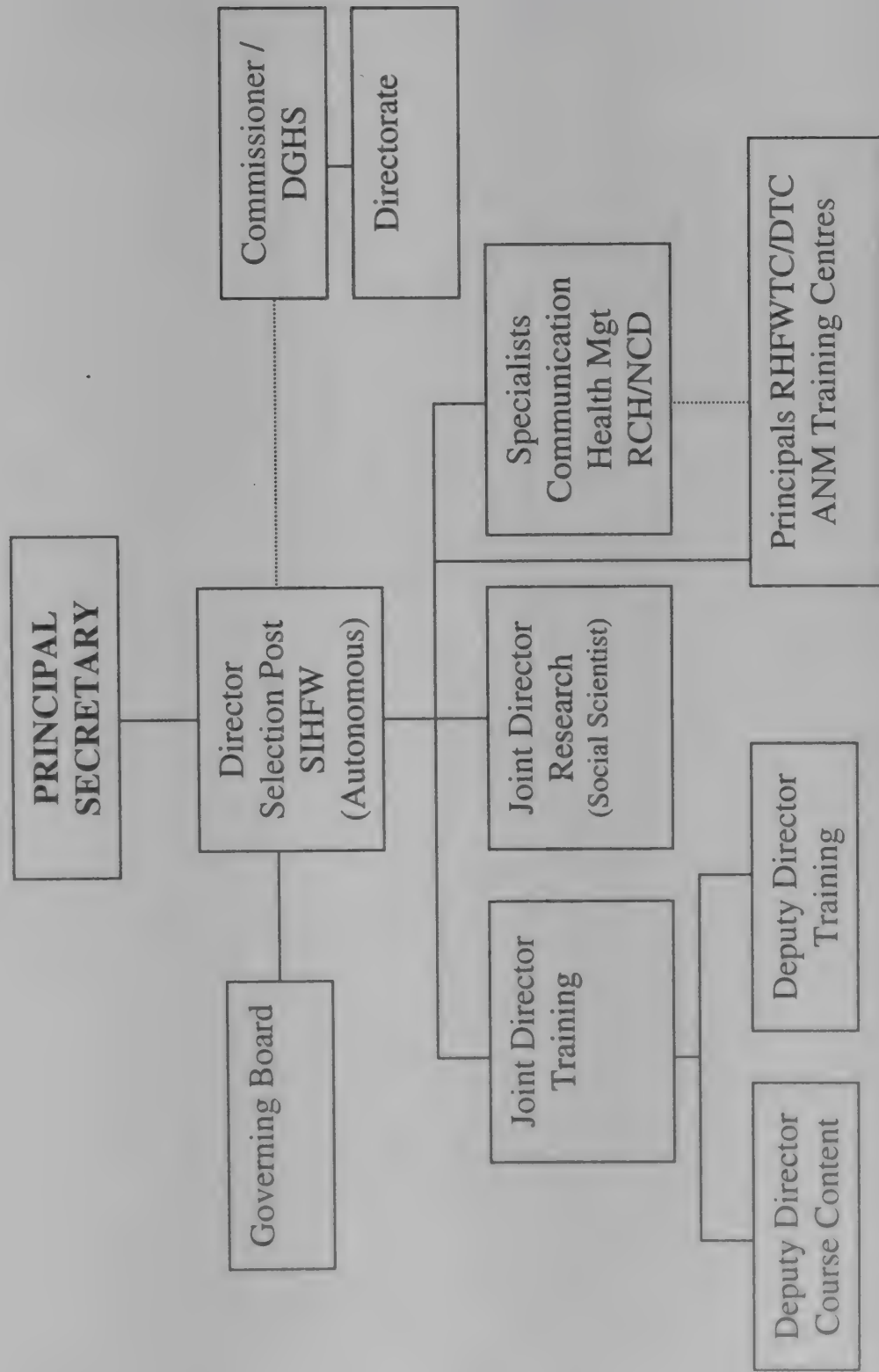


CHART NO. 14

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE

DRUG CONTROL DEPARTMENT

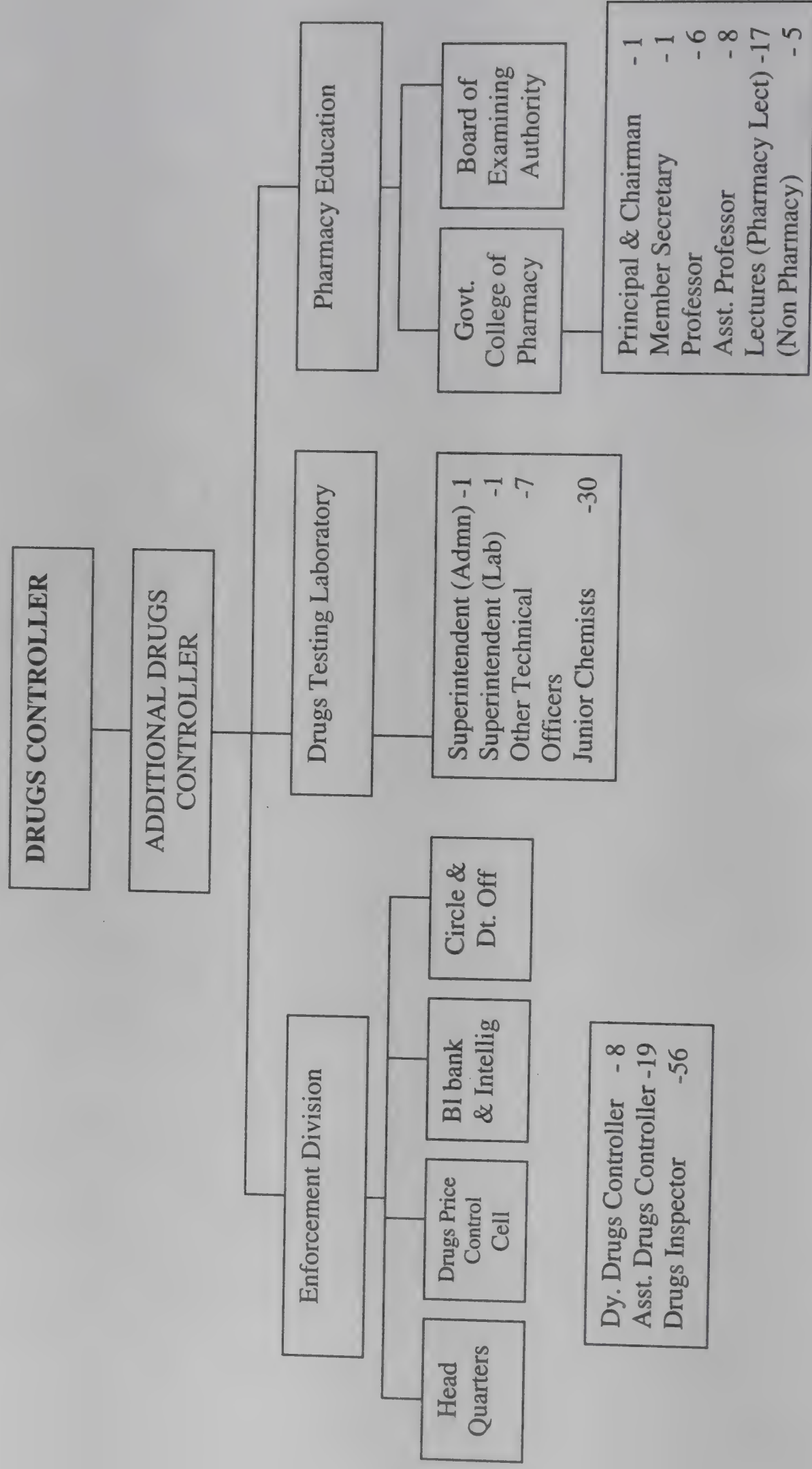
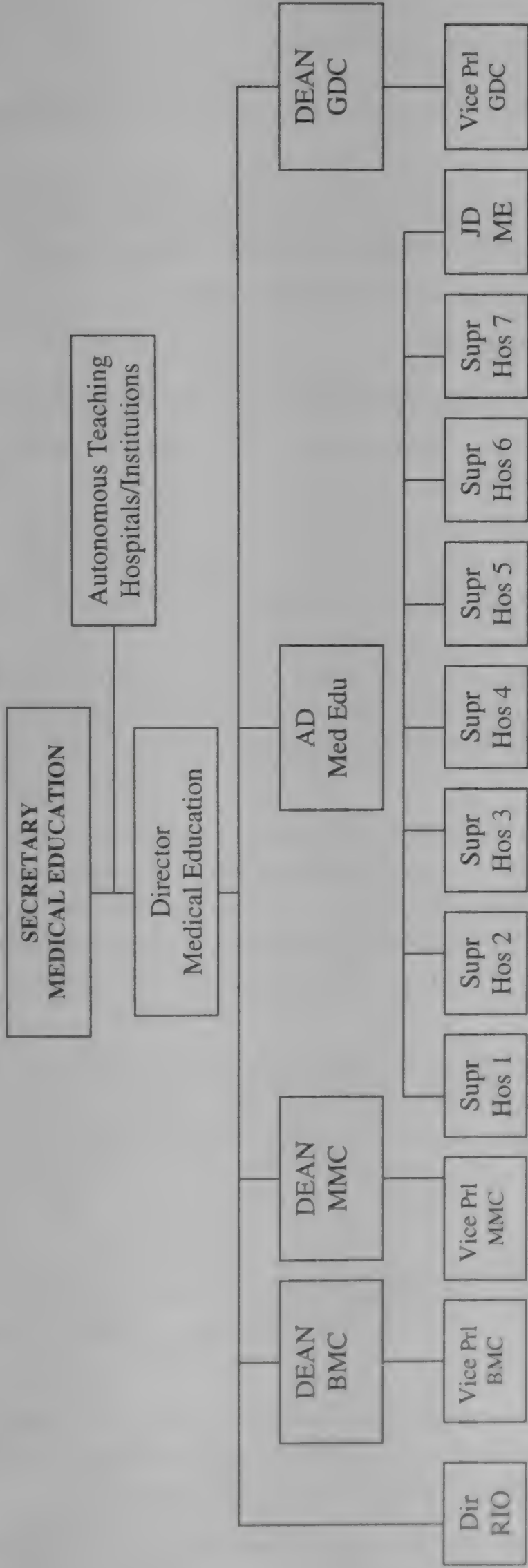


CHART NO. 15

DEPARTMENT OF HEALTH AND FAMILY WELFARE – ORGANISATIONAL STRUCTURE : PROPOSED

DEPARTMENT OF MEDICAL EDUCATION



PROFESSORS and HOD BMC / MMC		DD (ME)	DD (DE)
ASSOCIATE PROFESSORS			
ASSISTANT PROFESSORS			
LECTURERS			
REGISTRARS / TUTORS / DEMONSTRATORS / RESIDENTS			

Benefits of proposed structure

The key benefits of the proposed structure are outlined below:

- The structure is Programme based thereby leading to more accountability for programme officers from Taluka level itself
- The split of DHFW functions into Public Health and Medical for better monitoring and execution of duties and responsibilities, thus increasing the scope for accountability at each stage
- Equal promotional avenues for all medical professionals in the department
- Scope to have seniority cum merit during promotions
- Removal of divisional structure, leading to concentrating the activities at district level
- Direct monitoring of all national and state programs from the directorate itself, thus paving way for better coordination among districts and with the directorate

14.2 PLANNING AND MONITORING

*"I owe all my success in life to the fact that I
have always and in everything been a
quarter of an hour ahead of time."*

- Nelson

Health services must meet current needs and the management must have the capacity to adapt them to such needs. It would, therefore, be necessary to review the system periodically in terms of both content and adequacy. The character and content would be influenced by the population projections and also by the need to cater to under-serviced areas in the State. Any modifications or expansion of services have implications in terms of staff, training, and financial outlay. It is therefore necessary to have an in-built ability for carrying out such reviews and in the preparation of perspective plans.

It has been separately recommended that the Department should also have a strong, unified system of reporting as part of the Health Management Information System. This would necessarily have to form part of the planning and monitoring structure of the Department. These activities would call for the establishment of a **Planning and Monitoring Division**.

Present structure

There is, at present, a Joint Director in the office of the DHS in charge of planning. The post is currently designated as Joint Director (Health and Planning). The JD (H & P) is assisted by a Deputy Director (Planning) with supporting staff.

The functions of this post include preparation of the annual plans, five -year plans, and preparation of the monthly monitoring reports (MMR) which deals with financial and physical progress and the Karnataka Development Plan which deals with staff and organizational issues, that are submitted to Government.

An important function is the preparation of the Annual Report of the Department on time. The Preparation of these reports involves obtaining information from all units in the Directorate, including the Programme Officers

on a monthly basis. Coordination and constant interaction with the other Divisions and sections in the office of the DHS are essential elements of the post. However, the JD (H & P) has no direct responsibility for preparation of the reports of the projects such as KHSDP and IPP. It obtains the information for incorporation in the reports that are produced.

The JD (H & P) is concerned with the preparation of only schemes relating to the Plan. Non-Plan elements are prepared by the Chief Accounts Officer cum Financial Adviser. This is because the latter are more concerned with staff and maintenance issues. However, information on the latter is incorporated in the reports mentioned above.

The JD (H & P) is also in charge of the Bureau of Health Intelligence.

Role of the Planning and Monitoring Division

The planning process in the office of the DHS is restricted in scope and serves the immediate administrative needs of routine reporting. The process of preparation of Plan schemes is also fairly well established, as well as statistical reporting in specified formats. These are essential activities in themselves but the constant internal monitoring of performance, particularly the sensitive appraisal of available information, is near absent. The Planning Unit, which should be designated as the Planning and Monitoring Division in view of its importance, should play a more central role in the management of information systems within the Directorate. It should be responsible for all information flows, appraisal of such information and feed back of such appraisal to the functional divisions concerned. Currently, the appraisal of performance is within the functional divisions concerned, which would render it routine. Also, a total appreciation of the functioning of the Directorate would not be available to the Director.

The improvement in the Health Management Information System (HMIS) has been considered elsewhere in this Report. The reporting system is envisaged as common to the Department and not in sectional components, more related to individual programmes, as at present. With this change in the structure and focus of the HMIS, it would be logical to place its management under the Planning and Monitoring Division.

Functions of the Planning and Monitoring Division

1. Coordination of all reporting activity as part of the unified system of the HMIS and providing the information that other Divisions would require on the basis of the unified HMIS;
2. Coordination of all statistical activity in the Department, at various levels, including ensuring of quality of data, and processing and analysis of such data in the prescribed manner as may be required for various purposes;
3. Production of the Annual Report, periodic reports such as the Monthly Monitoring Reports, Karnataka Development Plan, and such other prescribed reports. The reports of the projects such as IPP and KHSDP should be incorporated so that there is one report for the entire health department;
4. Monitoring progress in implementation of Plan programmes and schemes each month to enable mid-course corrections to be made;
5. Preparation of Annual Plans and Five year Plans of the Department, coordinating with the other wings such as Medical Education, State Institute of Health and Family Welfare and the like;
6. Preparation of a perspective plan for the Health Sector and its updating at appropriate intervals.

7. Organization and management of the Geographical Information System that is recommended for establishment;
8. Organization and management of the Computer System that is recommended for establishment.

The Current Statistical System in the Health Department

The statistical system within the Department has developed in a rather ad-hoc manner. The statistical and reporting system at headquarters could be said to consist of three distinct wings as follows:

- a) The Bureau of Health Intelligence (BHI)
- b) The Demography and Evaluation Cell (D & E Cell)
- c) The statistical units / personnel attached to some Divisions on an independent basis.

The BHI is the unit that generates the Annual Administration Report and all statistical reports, excluding those relating to the RCH programme. It is also responsible for collection and collation of information on health indicators, including the macro indicators from the RCH programme. One important responsibility of the BHI is collection and processing of data relating to morbidity and mortality.

Its **responsibilities** include the following –

- a) Compiling periodical reports on rural health services and national programmes for the Government of India, in addition to reports for the State Government;
- b) Preparation of the Annual Report, Annual Administration Report and the Status Reports of the Directorate;
- c) Maintenance of statistics on Health and Medical Institutions and their bed strength;
- d) Annual morbidity and mortality statistics;
- e) Quarterly Progress Report on the Rural Health System;
- f) Monthly Health Condition Report;
- g) Report on indoor and outdoor patients treated and deaths among inpatients;
- h) Collection / compilation of information on snake bites and thresher accidents;
- i) Half yearly report on doctors working in rural and urban areas;
- j) Furnishing information for the Statistical Abstract of Karnataka, Karnataka at a Glance, and similar publications to the Directorate of Economics and Statistics.

The Demography and Evaluation Cell is located in the State Family Welfare Bureau. It is responsible for monitoring and evaluating the family welfare and RCH programmes and for rendering operational the Community Needs Assessment Approach of the RCH programme. It has ten field evaluation workers, all based at Bangalore, for carrying out field verification and surveys relating to prevalence of family welfare methods. However, they are evidently used for other work too.

In addition to the BHI and D & E Cell, statistical personnel are located in the Transport Section, Planning Section, Health Education Division and with the Programme Officers in charge of leprosy, malaria and filaria, TB, control of blindness, AIDS, goitre and communicable diseases.

The BHI is under the JD (Health and Planning) while the D & E Cell is under the Additional Director, RCH who also controls the unit in the Transport Section. The independent units come under the respective officers

concerned. These statistical units are independent of each other and there is little coordination between the three wings.

All statistical posts are filled by deputation from the Directorate of Economics and Statistics, except for the ten field workers who are employees of the Health Department.

There are no statistical posts at the Division level. At District level there are four posts of Assistant Statistical Officers, with one officer separately for (a) family planning, (b) immunization, (c) TB control and (d) leprosy. The ASO for family planning and ASO for immunization come under the DHO while the other two are under their respective Programme Officers. These sets of four ASOs are currently only in the old twenty districts. The posts have not been created in the seven new districts.

There is no statistical staff in hospitals, except in teaching hospitals where there would be a Lecturer in Statistics.

Table 14.1 : Statistical posts and their distribution in the Health Department.

Name of Wing/ Programme	Staff Sanctioned					
	Joint Director	Deputy Director	Assistant Director	Assistant Statistical Officer	Statistical Investigator	Field Evaluation Workers
Demography & Evaluation Cell (Family Welfare), under Additional Director RCH	1	2	-	2	-	10
Bureau of Health Intelligence, under Joint Director Planning	-	-	1	2	-	-
Transport Section, under Additional Director, RCH	-	-	1	1	-	-
Malaria and Filariasis	-	-	-	1	-	-
Health Education and Training	-	-	-	1	-	-
Leprosy	-	-	-	1	-	-
CMD	-	-	1	-	-	-
TB	-	-	-	-	1	-
AIDS	-	-	-	1	1	-
TB	-	-	-	-	1	-
Goitre	-	-	-	1	-	-
Control of Blindness	-	-	-	1	-	-
Planning Section	-	-	-	2	-	-
Total posts in office of DHS	1	2	3	13	3	10

It would be relevant to note that certain statistical / reporting activities relating to RCH and the PHCs are carried out by independent agencies with minimal coordination with the DHS. The Programme Research Centre located in the Institute for Social and Economic Change computes RCH indicators on the basis of surveys of 1000 households. Reports are not regularly received by the DHS and there would appear to be little feedback into the health management system of the conclusions of such surveys. The Centre for Operations Research and Training (CORT) carries out a facility survey for assessing availability of drugs and equipment in the PHCs. These reports are also sporadically received by the DHS. It would be desirable to ensure greater involvement of the DHS in these activities so that the results of the surveys augment management information for improvement of the services.

Need to establish a Geographical Information System

The establishment of a GIS is recommended. The system would be most useful for assessing the adequacy of health services and planning future needs. It would be a most useful management and planning tool. Incidentally, the computer system that would have to be established for this purpose could, at appropriate levels, also be used for the Health Management Information System.

Structural Changes

It would be evident that if the planning process in the health sector has to be unified, as indeed it should, it would be necessary to recognize the need for basic structural changes. Such changes would include (a) unifying the statistical functions at all levels and of the various units, (b) the inclusion of the reports of distinct projects such as the IPP and KHSDP within the unified reporting system, and (c) coordination within the Department with the Chief Accounts Officer / Financial Advisers of the Department itself and of the special projects.

The distribution of the posts in the various statistical / reporting units, as would be seen from the table 14.1, is very uneven. The D & E Cell is headed by an officer, designated as Demographer, of the rank of Joint Director of the Bureau of Economics and Statistics while the BHI is headed by an Assistant Director of Statistics. There is no uniformity in the work load and the levels of posts seem to have been determined more by what was acceptable to the sanctioning authorities than any rational considerations of work load, position in the hierarchy, etc.

The efficiency of the HMIS and GIS, the ensuring of quality of data, the management of the computerized system of maintenance and analysis of data and production of monitoring reports for better management would depend on the structure of the reporting and statistical system. If the system has to perform at peak efficiency and be able to serve its purpose, it would be necessary to consider certain structural changes.

In principle, it would be desirable to have a unified statistical and reporting system so that the planning and monitoring requirements are adequately met. The Planning unit in the office of the DHS may be designated as the Planning and Monitoring Division, as suggested earlier, and assigned a central role of information management and appraisal, with the functions indicated.

Structural changes at Headquarters

The Planning and Monitoring Division should be constituted with the following sections:

- The Reporting and Monitoring Section for production of reports based on the analytical statements generated by the Computer Section, and for preparation of all monitoring reports required by Government or needed for internal management;

- The Computer Section for information processing
- The GIS Section for assisting in monitoring and planning
- A Perspective Planning Section which would formulate the Perspective Plan, the Five Year Plans and the annual plans, monitor plan implementation, prepare and continuously update the perspective plan of the Department and monitor implementation of the Health and Population Policy of the State.

This Division should be responsible for the following:

- Strategic Planning of activities of the entire health system, including long term planning;
- Coordination with the Zilla Panchayats to ensure that the health plans of the districts are formulated, including taluka and Gram Panchayat plans, and integrate them into the State Health Plan;
- Assess budget resources for current and future needs, taking into consideration population, level of services, norms for services and other relevant parameters;
- Assess human resources and all material resources on a continuing basis.

All statistical and reporting functions in the headquarters should be unified. The various wings and units referred to earlier would form part of the Planning and Monitoring Division. These would include the BHI and the D & E Cell. There is a senior officer of the rank of Joint Director on deputation from the Directorate of Economics and Statistics, who heads the D & E Cell. This officer could be the Joint Director in charge of HMIS, the GIS and all statistical reporting within the Directorate. This Joint Director could be designated as **Joint Director, Health Information System**. This officer would be the Chief Statistical Officer and Head of the HMIS / Monitoring Section.

The Perspective Planning Section would be under a separate Joint Director. The post could be designated as **Joint Director, Planning**.

A GIS should be established in the Planning and Monitoring Division, as part of the HMIS, with the necessary computer capacity and operators. A system of requisite capacity should be installed, with the appropriate software, which would permit display and analysis of multiple parameters.

A well-equipped computer section would have to be established in the Planning and Monitoring Division to store all relevant information, produce reports in standard formats, carry out analytical studies and generally serve the purposes of the HMIS. A Systems Engineering / Manager would be necessary, who could be appointed on contract or through deputation, since this would be a single post. This officer would also be responsible for the technical supervision and maintenance of the GIS.

The information and analysis activities, those relating to GIS and the maintenance of the website of the Department should be unified. The present unit in the office of the Project Administrator, KHSDP, could be expanded and assigned these functions.

A website would have to be developed and maintained which would provide information on all aspects of the health services, including names of officers and locations of facilities, budget details and progress reports. This would provide transparency of the management of the system and also permit interventions by the public for whom the system is meant. The present website developed in the KHSDP could be the basis for this expanded and common departmental website.

Structural changes at District level

Strong statistical units would have to be established in the offices of the DHO / DMO and all reporting and

statistical functions in the district should be placed under them so far as their jurisdictions are concerned. A computer cell in their offices would also have to be set up. These cells would generate reports in standardized formats, which would be sent to Headquarters for consolidation and analysis. However, analysis at the district level would also be carried out so that monitoring by the DHO / DMO is possible at the district level. The Programme Officers of the district would get the reports in the formats they need from this cell

Two Assistant Statistical Officers, with two clerical assistants and one Computer Operator would have to be appointed for each district. The reporting format would be a unified document and at defined periodicity. This would imply that processing the report for consistency and quality of data would be that much easier and not require too much clerical attention.

Posts of two Assistant Statistical Officers should be provided in each of the seven new districts. There are at present 80 posts of Assistant Statistical Officers (on the basis of 4 per district in the old 20 districts). On the basis suggested above, there would be a surplus of 40 Assistant Statistical Officers of whom 14 would have to be allocated to the seven new districts. The resultant surplus of 26 posts could be used to finance partially the posts of computer operators and clerical assistants in the districts. It would be useful to carry out a review after two years of the workload of these officers to assess whether two officers are required in the smaller districts or whether more than two are necessary in the larger ones.

The computer unit in the office of the DHO would also provide the facility of the GIS for local monitoring and planning.

The central role of the Planning and Monitoring Division

The role of the Planning and Monitoring Division, as envisaged herein, is much wider than what it is at present and its responsibilities are much heavier. It is the Division that **plans for and monitors the performance of the Department**. In view of this expanded role, the Planning and Monitoring Division may be headed by an Additional Director.

The Additional Director, Planning and Monitoring would, as indicated elsewhere, be responsible for functions relating to liaison with voluntary and community organizations, and human resources development including training. In effect the Additional Director, Planning and Monitoring would oversee four Joint Directors, namely (i) Joint Director, Health Information System (ii) Joint Director, Planning (iii) Joint Director, Voluntary Organizations and (iv) Joint Director, Human Resources Development. In addition, the Additional Director would oversee the Systems Engineer / Manager.

It has been suggested that a Commission on Health should be established. This body would require information and assistance. It is recommended that the Planning and Monitoring Division be the secretariat of the Commission.

Recommendations

- *The Planning and Monitoring Division should be organized on the lines suggested above and vested with the authority to call for information from all other Divisions;*
- *In particular, this Division should be responsible for -*
 - *Strategic planning of activities of the entire health system, including long term planning,*
 - *Coordination with the Zilla Panchayats to ensure that the health plans of the districts are formulated, including taluka and Gram Panchayat plans, and integrating them into the State Health Plan,*
 - *Assessing budget resources for current and future needs, taking into consideration population, level of services, norms for services and other relevant parameters, and assessing human resources and all material resources on a continuing basis.*
- *The Division would have to include a Reporting and Monitoring Section, a Geographical Information System, a Computer Division and a Perspective Planning Section. The structure and responsibilities of these units have been indicated above;*
- *All reporting activities with regard to the HMIS should be vested in this Division. The analysis of information and generation of monitoring reports for various levels would be the responsibility of this Division, to enable assessing performance and initiating corrective action;*
- *A website would have to be developed and maintained with all information relating to health services, including financial and performance details;*
- *The statistical (HMIS) offices in the districts may be established on the lines indicated, with adequate computer facilities. District level monitoring reports must be produced for enhancing management capacity at the district level;*
- *This Division would function as the secretariat for the Commission on Health that has been recommended to be established.*

14.3 HEALTH MANAGEMENT INFORMATION SYSTEM (HMIS)

*"The information you have is not what you want;
The information you want is not what you need;
The information you need is not what you can get;
The information you can get costs more than what you want to pay"*
- *Finagle's Law*

An information system is a set of people, material and procedures, whose primary aim is to collect, transform and disseminate information in an organization.

An information system which supports the managerial function is called **Management Information System or MIS**. In the present era of information technology it is an integrated Man-Machine monitoring tool for the performance that provides information to support planning, decision making and executive control for managers of an organization.

Health Management Information System (HMIS) will need an **integrated MIS as well as a Disease Surveillance System** to ensure an efficient & effective functioning of the Health services

A Disease surveillance system is required to continually scrutinize, monitor, evaluate and plan for control & / or eradication of diseases, especially diseases of Public Health importance. A very important part of this is prevention and early management of disease outbreaks. The earliest signal of an outbreak is a second case of a disease with an epidemiological link to the first. Disease surveillance by prompt case reporting (not by summary reports), when monitored by an HMIS linked with a **Geographical Information System (GIS)**, will detect clustering in time and space and therefore early recognition of outbreaks.

A good HMIS can be characterized by 5 C's- that the management information be *correlated, consistent, correct, complete and concise*. Therefore minimum, essential, needs- based data, which is as basic as practical is collected and registered at the point of collection. Aggregation of the data and relevant information generated permits monitoring and planning at the micro level as well as strategic planning at higher levels.

Present HMIS

HMIS in the state originated in 1975 from the family planning program with a reporting system called "Family Planning Health Information System (FPHIS)". The Population Centre, Bangalore developed a Management Information & Evaluation System (MIES) between 1975-1980. Finally the Health Management Information System (HMIS) (version 2), was introduced in all the states in 1994-95 which specified:

- The minimum records and registers that would have to be maintained at the sub-centre level.
- The minimum information content of the single report emanating from sub-centre and PHC to District and State
- Training modules for paramedical personnel and their trainers

HMIS version 2.0 however, soon fell into disuse due to lack of consensus among the staff in the department about its use, non-availability of printed forms for collection of data and so on.

At present information collected on conventional, manual reporting formats by the female & male health workers from the Sub Centre levels is collated at the PHC level, and sent as monthly reports to district, state and National levels.

However,

- The data collection is not standardized as different vertical health programs e.g. RCH, TB, malaria, leprosy etc each have separate and differing reporting formats and monitoring systems.
- Printed forms even for the existing system are not available and therefore the reporting is irregular and inaccurate. Validity of the data is therefore difficult to establish, and tracing of data requires detailed inquiry.
- Often many common factors, demographic data for example, are entered many times in each of the different forms. This lack of integration and uniformity results in duplication and waste of internal resources.
- Aggregation of data is done only at the Directorate level, and very little analysis is carried out. Therefore the existing HMIS is not used for meaningful monitoring, planning and action at the micro level or for strategic planning and management of the Health system.

- The Department of Health & Family Welfare, Karnataka has 1676 Primary Health centres with about 6 Sub Centres each, about 250 Secondary care hospitals at taluka and district levels, and several Teaching and Tertiary care Hospitals. There are about sixty thousand staff working for the department. The information on Human Resources including details of available personnel, vacancies, training etc. is not up to date. The details of other infrastructure including buildings, equipment, drugs etc remain scanty. A laudable effort has been made by Karnataka Health Systems Development Project to develop an HMIS for secondary care hospitals. But this is not integrated with (personnel) data available with the Directorate.
- Epidemic reporting and analysis does not utilize the latest technology such as GIS and is not available for prevention and control of outbreaks. In fact, frequently, the department gets to know about disease outbreaks only after the first reports appear in the press.
- Reasonable input and output indicators are being generated even now. But good process & outcome indicators are not identified. This should include equity sensitive indicators for gender, regional disparities, SC/ST and other marginalized and vulnerable groups; indicators of quality of service; certain developmental indicators that impact on health; follow up & outcome of training programmes; cost-effectiveness and so on. It is recommended that skilled investigators from the Planning and Monitoring Division of the Directorate evolve **process and outcome indicators** so as to continually look at ways to improve the programmes. They would therefore also have to specify data to be generated; the action required as well as the managerial/administrative levels at which the action should be taken and so on.
- Based on the above, it would also be possible to identify specific and needs-based areas for research.
- Census data and data from other relevant quantitative & qualitative research of government or private origin should also be used as a source of information and to identify indicators.

Following the recommendations in the interim report of the Karnataka Task Force on Health, certain actions have been initiated.

A committee constituted in the year 2000 is working on integration of formats and databases to develop a comprehensive system that will be computerized and integrated with a geographical information system (GIS). Efforts will be made to increase the efficiency and validity of reporting mechanisms and to evolve methods to use information generated for decision making at PHCs, CHCs, taluks and district level.

An MOU has also been signed with a soft ware company to assist in the development of limited modules relating to personnel, infrastructure, disease surveillance, etc. CNA reporting will largely follow the HMIS version 2 module but will be integrated into the whole system.

Computerization will be at District and State level initially. Connectivity to the State HQs and national level will be worked out.

The proper installation and development of such a system, including training of personnel, testing of the soft ware, will take a long time and it is expected that several initiatives will continue to be required throughout the project period to make the HMIS function well.

In addition, to the regular disease surveillance system data, a model using the postcard system which has been piloted in some centres in Tamil Nadu and now being implemented in Kerala, will be pilot tested in two districts (Dharwad & Chickmagalur). This may be useful in generating data from private hospitals and nursing homes, which is not available now.

Recommendations

A comprehensive Health Management Information System (HMIS) should be put in place by end of the year 2001 to enable the Health and Family Welfare Department to improve its service delivery. This should include the following elements:

- To adequately fulfill manpower requirements and avoid mis-matches especially in the posting of Medical officers, details regarding all personnel, at all levels, (viz. Number of sanctioned posts & number filled; recruitment, transfers, leave etc) should be computerised and monitored.
- Details regarding infrastructural facilities – buildings, equipment; etc. should be monitored continually to ensure adequate availability, timely repairs, civil works and so on.
- The HMIS should be an effective monitoring tool to assess the performance of the system and which provides for informed planning and decision by the DHS. At the same time it should also support micro-planning and management at all levels where action is essential. The performance indicators and protocols required for objective monitoring of all health activities up to the subcentre level should be worked out.
- To increase the efficiency and validity of reporting mechanisms, minimum data that has to be collected should be identified; integrated reporting formats should be developed and adequate supply of registers/forms especially at the sub centre level should be ensured.
- A comprehensive Disease surveillance system should be evolved. This should continually scrutinize, monitor, evaluate and plan for control & / or eradication of diseases, especially diseases of Public Health importance and should be useful at grass roots levels for prevention and management of disease outbreaks.(Please see subchapter on disease surveillance)
- The HMIS, Disease surveillance system and a geographical information system (GIS) should be integrated into one computerized system
- Computerization which is envisaged at the District and State level initially, should be extended to the Taluka and PHC levels at the earliest.
- The staff at decision- making levels should be trained to use the HMIS & GIS effectively for micro-level action and planning.
- Training in basic computer literacy and data entry and analysis of all categories of staff involved should be effected.
- Connectivity and communication systems between the different health institutions, offices and levels should be established.
- The present system concentrates on information on communicable diseases. It should also get geared up for management of non-communicable diseases, especially with the changing patterns of diseases due to urbanization, industrialization, pollution and changing life styles.
- The web page of the department should be constantly up-dated. It should be maximally utilized not only for awareness and information but also as a means for promotion of transparency.
- An expert panel should monitor and upgrade the system to keep up with the constant and rapid evolution in IT.
- In the long run mechanisms to utilize the computer networking for “Distance-Learning” programmes, “Tele Medicine” etc. for the health personnel, and for Health Education and Health Promotion activities for the community could be identified and implemented.

15. HEALTH FINANCING

15.1 ALLOCATIONS AND EXPENDITURE

In assessing the financing of the health sector, the issues that would need consideration would include the following –

- Adequacy of funding in relation to the present and future needs and to the functions and responsibilities of the Department;
- The adequacy of financial delegations;
- Operational issues relating to reduction of accounting workload at field levels and simplification of procedures,

It must be stated at the outset that the focus here is on the financing of health services by the State. Municipal Corporations and other municipalities also finance health services. These have not been included here. However, it is necessary to conduct a comprehensive study of such services and their financing.

Though the public health services in India play a vital role, their contribution to total health services in the country is low. The proportions of public and private expenditure to total expenditure on health and related parameters, are presented in the following table 15.1.¹

Table 15.1 : Public and private expenditure on health in some selected countries

Country	Public Expenditure as % of total expenditure on health	Private expenditure as % of total expenditure on health	Public expenditure on health as % of total public expenditure	Per Capita Public expenditure on health in international dollars
India	13	87	3.9	11
Bangladesh	46	54	9	32
Pakistan	22.9	77.1	2.9	16
Sri Lanka	45.4	54.7	5.2	35
Malaysia	57.6	42.4	5.1	116
Indonesia	36.8	63.2	3	21
Singapore	35.8	64.2	5.5	26.8
Philippines	48.5	51.5	7.2	48
China	24.9	75.1	5.5	18
Cuba	87.5	12.5	10	96
Japan	80.2	19.9	16.2	1410
France	76.9	23.1	13.8	1634
Canada	72	28	15.3	1322
United Kingdom	96.9	3.1	14.3	1156
USA	44.1	55.9	18.5	1643

¹ From Table 8, World Health Report 2000 – Health Systems – Improving Performance, WHO

Public expenditure as a percentage of total expenditure on health is very low in India, compared with some of the neighbouring countries and generally in Asia. Bangladesh and Sri Lanka have a higher proportion on health out of total public expenditure. The comparatively higher outlay in the public sector, combined with the efficiency of the health services, is reflected in the per capita expenditure in international dollars in the countries. The figures do not reflect the sections of society that are deprived of better health services. In India, clearly, the low scales of outlays result in the rural areas and the economically weaker sections being so deprived. There is a case for higher public expenditure on health services in the country.

Outlays on health in Karnataka

The revenue expenditure under medical and public health which was Rs. 379.87 crores in the VI Plan (1980–85) increased to Rs. 739.98 crores in the VII Plan (1985–90). The capital outlays during these plans were Rs. 13.85 crores and 13.64 crores respectively. The investment in capital assets has not apparently kept pace with revenue expenditure.

The expenditure on health and family welfare has been about 6.1 % of the State's revenue expenditure, except in 1996-97 when it fell to 5.1 %². As a proportion of the State Domestic Product, it was 1.2 % in 1990-91 but is 1 % in 1997-98.

The expenditure on health and family welfare under plan and non plan at current and constant prices, with 1993-94 as the base year, as shown in Table 15.2 indicates that there has been an erosion of outlay³:

Table 15.2 : Plan and non-plan expenditure on health in Karnataka

Year	at Current Prices PLAN	at Constant Prices PLAN	Base year 1993-94 at Current Prices NON PLAN	at Constant Prices NON PLAN Base year 1993-94
1993 – 94	122.02	122.02	269.22	269.22
1994 – 95	163.84	153.15	293.91	274.73
1995 – 96	206.35	179.75	290.11	252.71
1996 – 97	218.89	177.34	306.20	248.08
1997 – 98	263.81	203.53	360.55	278.16
1998 – 99	232.32	167.79	476.08	343.84

The figures at constant prices indicate that there has been no steady pattern over the years of increasing investment, both revenue and capital together, in health services.

The per capita expenditure on health and family welfare services at current prices and at constant prices are given in Table 15.3.⁴:

² Table 9, "The Health Budget in Karnataka" by Indira and Vyasulu

³ Tables 3 and 4, Indira and Vyasulu

⁴ Computed from Tables 4 and 9, Indira and Vyasulu

Table 15.3 : Per capita expenditure on health and family welfare

Year	Per Capita expenditure at Current Prices	Per Capita Expenditure at Constant Prices
1993 – 94	127.9	127.9
1994 – 95	132.3	123.7
1995 – 96	134.5	117.2
1996 – 97	126.6	102.6
1997 – 98	143.1	110.4
1998 – 99	174.1	125.74
1999 – 2000	185.1	

The per capita expenditure on health has not tended to increase in real terms over the years. The comparatively larger figures in some of the years are attributable to injection of funds through externally aided projects. At best what could be said is that the outlay on health and family welfare has kept pace with population but that there has not been any additionality that would have contributed to an enhancement of services in quantum terms.

The per capita expenditure on health, which includes public health, medical and family welfare, in Karnataka and the neighbouring States ⁵ in 1999-00 was Rs.185.10 in Karnataka, Rs. 128.11 in Andhra Pradesh, Rs. 186.65 in Kerala and Rs. 166.20 in Tamil Nadu.

The per capita expenditure in the State compares favourably with those in the neighbouring States. However, in the absence of a norm of optimum expenditure, which again would have to be based on defined scale of services, it would be difficult to assess the adequacy or otherwise of outlays. The more important point in such comparisons would be the efficiency of use of the financial outlays rather than the quanta. It must also be noted that inter-state comparisons can at best be used as pointers since the components within the health budgets may vary.

The expenditure on the primary sector has had a growth rate of 6.4 per cent, which is only marginally higher than that of the Secondary Sector of 6.3 per cent and of the Tertiary Sector of 6.0 per cent ⁶. The investments in primary, secondary and tertiary care and between rural and urban areas should be based on the norms that would have to be developed regarding scale of services in these sectors and areas. Resource flows would have to be so managed as to increase health facilities in the rural areas.

⁵ Data for the neighbouring States has been compiled from the "Public Finance: Economic Intelligence Service, CMIE, May 1998 and Feb 1999". Mid year (as on 1st October) estimates of population in million has been used from the Socio-economic Statistics, India 1998 for the calculation of per capita income. The data for Karnataka is from Table 2.2, Page 22 of the Draft Project Proposal "Karnataka Integrated Health, Nutrition and Family Welfare Services Development Project, Government of Karnataka.

⁶ Expenditure Pattern of the Health Sector in Karnataka, Subramanya and P.H. Reddy, Southern Economist, 1997

Both the total and per capita allocations to the districts do not follow a pattern that would be consistent with parameters such as population size, area and general development of health services in the districts.

The per capita outlay also indicates the lack of adoption of parameters for allocations to the districts, as the Table 15.4 indicates⁷ for two years 1991 and 1995:

Table 15.4: Per capita outlays in the districts

Districts	Per Capita 1991	Per Capita 1995
Bangalore (Urban)	0.94	1.67
Bangalore (Rural)	8.62	12.82
Chitradurga	7.57	9.97
Kolar	6.15	7.62
Shimoga	5.22	7.87
Tumkur	7.24	6.65
Mysore	6.05	6.67
Chikamagalur	10.68	13.08
Dakshina Kannada	5.61	6.60
Hassan	9.06	12.79
Kodagu	10.27	19.14
Mandya	7.88	9.71
Belgaum	7.47	6.62
Bijapur	8.58	9.09
Dharwad	5.50	6.97
Uttara Kannada	11.12	11.35
Gulbarga	7.50	10.49
Bellary	8.35	9.10
Bidar	8.45	10.85
Raichur	3.55	5.35

The allocations generally would be based on the staff component in each district, need to upgrade services in them and similar administrative considerations. However, this is an aspect that would further study and analysis so as to determine some logical and reasonable norm for budget allocations that also provides some degree of flexibility. The allocations would also have to take into account the District Health Plans.

The Tables attached (Annexures A and B) presents the budget figures for the two major revenue heads 2210 – Medical and Public Health and 2211 – Family Welfare. For budgetary purposes, the revenue Head Medical and Public Health includes Allopathy services (rural and urban), Other Systems of Medicine (rural and urban), Medical Education, Training and Research, Public Health and a residuary category General which includes the budget allocations to the local bodies. It also presents the figures on capital outlays.

The revenue head 2210 and the corresponding capital head 4210 include the allocations relating to the Directorate of Health Services, Department of Medical Education, Directorate of Indian Systems of Medicine

⁷ Pages 23 to 29, and Table 22 Indira and Vyasulu.

and Homoeopathy, the Office of the Drugs Controller, the Karnataka Health Systems Project, and the autonomous institutions.

The revenue head 2211 and the corresponding capital head 4211 include the allocations to Family Welfare (RCH), IPP VIII and IPP IX.

In the case of Medical and Public Health, the allocations under Non Plan have increased over the years. This is largely due to the salary element. However, it must be recognized that the human resources would necessarily constitute the single largest component in the health services. The growth in the staffing cannot by itself be considered a negative element. The more important issue would be the efficiency of this human resource.

The budget allocations have rarely been fully utilized. In some cases, there have been variations, both in savings and excess expenditure over the allocations that suggest lack of continuous review and mid-course corrections. For example, for the year 1998-99, the budgeted and actual expenditure under 2210 – Medical and Public Health are as in Table 15.5.

Table 15.5 : Expenditure on 'Medical and Public Health', 1998-99

Head of Account	Budgeted lakhs	Actuals lakhs	Savings (-)/excess (+) lakhs
01– Urban Health Services – Allopathy			
Plan	7397	5905	- 1492
Non Plan	20921	18878	- 2043
02 – Urban Health Services – Other Systems of Medicine			
Plan	24	14	- 10
Non Plan	313	318	+ 5
03 – Rural Health Services – Allopathy			
Plan	219	144	- 75
Non Plan	287	387	+ 100
04 – Rural Health Services – Other Systems of Medicine			
Plan	25	9	- 16
Non Plan	123	115	- 8
05 – Medical Education, Training and Research			
Plan	2026	3832	+ 1806
Non Plan	6594	4422	- 2172
06 – Public Health			
Plan	3876	1736	- 2140
Non Plan	2815	2292	- 523
80 - General			
Plan	3059	3107	+ 48
Non Plan	20626	20425	- 201

Except under Medical Education, Training and Research – Plan and small amounts under certain other heads, the trend has been towards savings. The savings under 06 -Public Health is particularly unfortunate since this includes outlays on prevention and control of diseases, drug control, manufacture of sera and vaccines, public health laboratories and health education and publicity. The head 01 – Urban Health Services – Allopathy, where also there are massive savings includes medical stores, hospitals and dispensaries, among others.

From the table attached it would be seen that under 2211 – Family Planning on revenue account, there have been savings. In the year 1998-99 the savings have been particularly high.

The budget support over the next few years could be computed on an approximate basis, including both outlays on revenue and capital together, assuming the maximum norm of 213 per capita, as in Table 15.6.

Table 15.6 : Budget support needed for 2000-2005

Year	Population in millions	Total minimum Outlay in Crores
2000	52.09	1109.51
2001	52.72	1122.93
2002	53.33	1135.92
2003	53.99	1149.98
2004	54.69	1164.89
2005	55.42	1180.44

These are at current values and would have to be adjusted for inflation over the years. Given the current trend in increase in annual allocations, it is likely that these outlays would be provided in the budgets of these years. However, these outlays would be just sufficient to maintain the current level of services, with no enhancement in the scale or quality. In other words, this scale of financing would only maintain the status quo.

It would, therefore, seem that there is no apparent inadequacy of funds only if the current level and efficiency of the services is considered as adequate. There would, however, be a need for an internal review of specific allocations. For example, the adequacy of funds for repairs of vehicles and equipment, especially in the laboratories, repairs to buildings, outlays for touring costs for ensuring adequate supervision, funds for administrative expenses of the PHCs, would bear a critical review. This would have to be undertaken by the Planning and Monitoring Division on an urgent basis.

The question of sustainability of the desired enhanced level of funding needs attention. In times of financial constraints, it has been the practice to impose budgetary cuts on the social sectors, with education and health being the worst hit. This is most unfortunate because the establishment of the health services and their being built up to reasonable levels of efficiency takes effort and time. Unlike sectors in which the creation of fixed assets

is predominant, in the health sector the placement of doctors, their training and local acceptance are processes over time. Abrupt cuts in allocations destroy continuity and waste expertise and experience, with long term effects on the services. It is, therefore, recommended that budgetary cuts should not be made in the health sector.

In this context, it would be relevant to keep in mind the need to provide funds for maintenance of the assets. A separate Division for this purpose has been recommended while considering the management structure. In particular, it would be essential to review the condition of the vehicles in the Department so as to render all of them usable for enhancing supervision. There are 1492 vehicles in the H & FW Department alone, of which 1150 are under the control of the Zilla Panchayats⁸. Of the 1492, about 105 are assessed for condemnation and about 100 are under repairs. The rest are being used but many are in bad condition. There are many vehicles lying around as junk. It is necessary that a review is carried out of the condition of the vehicles to identify those that need condemnation and those that need repairs. Action to dispose off unserviceable vehicles is necessary so that realistic need for funds for repairs and maintenance could be estimated. This would be necessary with regard to all assets.

It is also necessary to provide sufficient funds for the maintenance of assets and continuation of the activities created under externally aided projects. The latter constitute an injection of large funds over a short period which are not allocations made from the normal revenues of the State. However, at the end of the project period, it would be essential to provide by way of enhancement of the budget funds for sustaining the gains of these projects. The additional funds for this purpose would have to be found and the budget allocations enhanced to the extent necessary. In this context, a review of the condition of the vehicles must be made to condemn, repair and replace them as may be necessary to enhance supervision capability.

Equally important is the need for both adequate and timely releases of allocations. Such releases, in combination with sufficient financial delegations, would go a long way towards maintaining and improving the health services.

⁸ Page 60, Booklet of answers to the Legislative Assembly Estimates Committee Questionnaire, 2000 – 2001, Directorate of Health and Family Welfare.

15.2 EXTERNAL ASSISTANCE FOR HEALTH

Considerable external assistance is availed of by the State for projects. In 2000-01 there were 22 external agencies, including the World Bank. The expenditure incurred on these projects since inception and upto 31 March 2000 was Rs. 1501.43 crores⁹. Of the 22 projects 3 relate to health. The details are as in Table 15.7.

Table 15.7 : Project costs and expenditure

Sector	Project Cost in crores	Year of Commencement	Expenditure as on 31 March 2000, in crores	Outlay in 2000 – 01, in crores
Agriculture and Allied Activities	260.73	Various years, five projects	28.90	7.05
Forest	703.77	Various years, two projects	343.50	98.48
Irrigation	27.10	Various years, one Project	12.80	8.00
Rural Development	586.71	Various years, three projects	467.72	119
Commerce and Industries	20.03	Various years, two projects	4.58	6.14
Urban Development	2854.87	Various years, five projects	322.12	367.50
Public Works	300	2000 – 01	nil	42.68
Sub Total	4753.24		1179.62	648.85
Health and Family Welfare				
KHSDP	545.81	1996-97	289.62	112.24
OPEC – Development of Raichur Hospital	29.25	1991-92	28.62	7.07
Development of Secondary Level Hospitals	45.00	1996-97	3.57	1.79
Sub Total for Health	620.06		321.81	121.10
Grand Total	5373.33		1501.43	769.95

The assistance received for the India Population Projects and RCH must be added to the total indicated for health above. The funding for IPP – IX is Rs. 114.75 crores and that for IPP – VIII is Rs. 39.21 crores. The outlay on RCH is 190 crores. If these are also included, the total external aid for health projects would be of the order of Rs. 964.02 crores. Nearly 18 per cent of the total external assistance is for the health sector.

Even discounting for the grant element, if any, the long-term loan burden is noticeable. However, there is the advantage of immediate funding for projects, with repayment being over a long period and on soft terms. Quite apart from the financial implications, there is the equally important issue of maintenance of the assets created through such aided projects and the integration of the improved systems developed in their implementation into the main stream of health administration. These issues have been discussed elsewhere.

⁹ Economic Survey 2000 – 2001, Planning, Statistics and Science and Technology Department, Government of Karnataka, March 2001, Page 169

15.3 MANAGEMENT STRUCTURE

At present there is one separate Chief Accounts Officer cum Financial Adviser in each of the offices of the Director of Health Services, Director of Medical Education, Project Director IPP VIII, Project Director IPP IX and Project Director KHSDP. In the offices of the Additional Director, Family Welfare and RCH, Drugs Controller and Director, Indian Systems of Medicine and Homeopathy there is an Accounts Officer. Supporting staff is available in all these units.

Currently, they work independently. The coordination of the budgets and other financial matters occurs at the level of the Internal Financial Adviser in the office of the Principal Secretary. The latter would be concerned more with the mechanisms of formulating the budget proposals, sanctions and control over expenditure and the like. The needs of the health services and the priorities would not be a concern. In order to ensure that the needs of the Department are provided for and that priorities both among programmes and among regions are maintained, it would be necessary that there is focal point for budgeting. This would, logically have to be the Commissioner (or Director General of Health in the reorganization that is suggested). The Commissioner would have to be vested with the authority to call for information from associated Departments / Directorates.

The reorganization of the health services into two distinct wings for public health and medical has been recommended. It would, therefore, be necessary to reorganize the financial control mechanisms. Accounts offices, with supporting staff are recommended as follows:

1. Chief Accounts Officers cum Financial Advisers in the Offices of the Director of Medical Services, Director of Public Health, Director of Medical Education;
2. One Chief Accounts Officer cum Financial Adviser in the Office of the Director, Externally Aided Projects;
3. Accounts Officer in the other Directorates.

It would also be necessary to continue the accounts sections for the IPP Project Officers and for the other Externally Aided Projects, since accounts for these activities have to be maintained separately.

It would be essential to ensure coordination among these units, particularly from the point of view of preparation and execution of perspective plans. The Additional Director, Planning and Monitoring Division, who reports directly to the Commissioner, would have to be responsible for such coordination. It would be necessary to endow this officer with the necessary authority to call for information, make suggestions and generally coordinate the plans of the various Directorates / Divisions. It would be necessary to provide an officer with budgeting and financial experience in the Planning and Monitoring Division to assist the Additional Director. A senior position of Financial Adviser may be established in this Division. This could be filled by a health economist or by selection, based on experience, from the State Accounts and Planning cadres of Government.

Delegation of financial powers

The financial delegations within all the Directorates would bear review. Many of the delegations would have to be enhanced in real terms to adjust for inflation. Further delegations would also be desirable. The adequacy of delegations and the amendment of the existing orders may be reviewed by the Commissioner who has been designated as the coordinator for all Directorates in the structure proposed.

While further delegations would be desirable, it would, at the same time, be necessary to reiterate that unless officers are prepared to assume the responsibility that such delegated powers impose, the whole purpose of delegations would be frustrated. Currently, the stipulations of checks and balances within the system are taken

advantage of to avoid assuming such responsibility. It would be desirable to include the manner of exercise of such authority with responsibility in the annual review of performance.

Management of Budget allocations

The management of the budget would seem to bear review. For example, in the Inspection Report of November 1999 on the accounts of the Family Welfare Programme, it is pointed out that nearly Rs. 380 lakhs was unutilized from the Plan funds of 1997-98 and that these continued to be unutilized even in the next year though the Government of India had permitted such use. The same report mentions sanctions accorded on the last day of the financial year for equipment, resulting in drawing and crediting of the amount to a Personal Deposit Account, which is an irregularity and, more importantly, non-procurement of the equipment in time. Internal procedures for monitoring expenditure, particularly that relating to purchase of equipment, would need to be reviewed to ensure expeditious utilization of allocations in the best manner possible. An important issue that would need to be monitored is the timeliness and adequacy of releases within the sanctioned budget. Experience indicates that delays in releases and sanctions have very often resulted in nonperformance. In other words, an integrated system of financial review needs to be developed. This could be one important component of the HMIS that has been recommended.

The reports relating to accounts and financial matters now prescribed at the field level would need to be reviewed. Currently, numerous forms have been prescribed, mainly based on the minor heads of accounts. While this facilitates aggregation of accounts at higher levels, it casts a repetitive workload on the ANMs. A comprehensive review of the reporting system has been recommended. As part of this review, it is recommended that the component of reporting on accounts be also reviewed to consider consolidation of reports and integration with the recommended HMIS.

15.4 BUDGET PLANNING AND CONTROL

There would be three elements in planning the budget for health services – (a) preparation of the annual budgets, (b) planning for long term needs and (c) monitoring utilization and outcomes.

The procedure for preparation of the annual budgets is well established. They are based on annual requirements as assessed by the Departments and include both plan and non-plan elements. The general practice is to provide an ad hoc increase, unless obvious large outlays are known such as salary revisions. This process would bear refinement so that the estimates reflect real needs on specific activities more realistically. This would require an examination of the more important elements to assess the outlay that would be necessary to ensure efficient use of the resources. Such elements would include travel, maintenance costs of equipment, buildings and vehicles, costs of installation of new equipment with associated training costs, and the like. Such a review would have to be carried out within the financial year 2001-02 so that future annual budgets reflect the important elements adequately.

The long-term financial requirements of health services would need to be assessed on the basis of certain parameters. The latter would include norms for health services and their estimation in annual estimated prices. It would also have to be based on the reorganization of the services that has been recommended. The long-term budget requirements would also have to be based on the perspective plan for health services that would have to be prepared and take into account the important aspects relating to sustainability of assets and activities created through externally assisted projects.

As a measure of sustaining health promotion, a proportion of the State taxes on tobacco and alcohol should be made available for programmes to counter the adverse health aspects of the abuse of these substances. If feasible, a specific surcharge on the taxes payable on these substances could be levied and reserved for the health promotional measures.

While it is necessary to provide adequate budgetary support for health services, it is equally important to institute efficient mechanisms for monitoring of expenditure and determining whether the expected outcomes of the expenditure have been achieved. The existing system of monitoring expenditure concentrates on the former, but even this would need improvement. Monitoring of expenditure should particularly include a review of maintenance, acquisition of equipments, constructions, training and similar items.

Outcomes are rarely monitored. Norms for such monitoring need to be developed, which would include both quantitative and qualitative elements. This would have to be done through a professional review of the major services in terms of expected outcomes. The monitoring of this aspect would, in course of time, have to be built into the proposed composite HMIS.

Auditing of PHCs

There is no audit of the PHCs at present. These are too many in number and annual audit would, therefore, be difficult. However, it would be useful to institute a system of test audit at this level, the purpose being not so much from the accounting point of view but rather as an attempt to determine efficient use of resources. The test audit would, while covering the financial aspects, more importantly concentrate on performance in relation to outlays on specific activities. Such test audits, while instilling a sense of financial discipline, would also help in evaluating the performance of health services at the community level and help in making improvements. It is recommended that such a system of test audit be tried out on a pilot basis to determine both feasibility and utility. The State Accounts Department would find it difficult to carry out such activities. The pilot audit could be instituted in consultation with the Institute of Chartered Accountants.

In due course, this system of both financial and performance audit could be extended to the taluka level.

The appropriate agency that could be assigned the responsibility for the purposes mentioned would be the Planning and Monitoring Division. The Division could develop the formats, norms and mechanisms through consultants.

15.5 INFORMATION FOR HEALTH FINANCING

There are at present no norms, based on adequacy and quality, of health services at various levels. The absence of such norms renders financial planning difficult and, as currently, makes the exercise largely ad hoc. It would be desirable to develop indicative norms for health services in its various elements at the primary, secondary and tertiary levels. Such norms would be dependent on what are determined as the minimum services that should be available at a given point of time. Such norms would provide guidance in developing a budget that reflects needs more realistically. Subject to availability of resources, budgetary allocations could then be made over a reasonable time span to be able to achieve the standards.

The performance budget that is now being prepared would also become more outcomes oriented than what it is at present if such norms and the outcomes in relation to such norms are built in. The norms would obviously need to be reviewed periodically.

Health services are provided by Municipal Corporations and other local bodies. The structure of these services, the scale of services and their financing would need study. Certain Departments, as for example the Police Department, have internal medical facilities. In addition, there is wide network of private health services. To assess the needs at State and district level, it would be desirable to carry out a composite study of the total availability and financing of health services in the State. The fact that in many cases the municipal bodies do not have the funds to maintain even basic health services which they are required to do must be noted. In such cases the State Government would have to provide the minimum additional funds that may be necessary to these bodies to maintain the essential health services.

The availability of health services within the broad regions of the State would also need examination. This would permit the allocations among the districts on a rational basis. As mentioned earlier, some flexibility would be necessary to provide for special needs of a district or a sub-region.

The family expenditure on health and medical services

The costs to a family for health and medical services need to be assessed. There are studies that have investigated these costs in terms of private and public health services. The results of these studies, supplemented with further investigations would provide information on the contribution of public health services in comparison with that provided by the private sector. This would help in planning the public services for the benefit of a larger proportion of the economically and socially weaker population.

It would also be necessary to review the staffing pattern at periodic intervals to determine the numbers and the need at various levels, their location and training. This could be done by a Staff Inspection Unit, trained in organization and management principles, at specified periods so that the staffing needs and expertise of the health services keep pace with requirements and technology.

A database would need to be built up of the essential information needed for financial planning. This database would, logically, have to be part of the database recommended to be instituted as part of the HMIS.

15.6 COMMUNITY FINANCING AND INSURANCE:

Enhancing Community Financing for Health

It is the responsibility of the State to provide health services of acceptable quality and, for this purpose, provide sufficient budgetary support. However, it would be desirable to evoke the participation of the community in partially meeting the costs of health care. This could be done in two ways. Firstly, charges could be levied for certain services and secondly, schemes relating to community insurance could be adopted.

User fees

The charging of user fees has already been introduced in the State, with the services that would be charged for and the scale of fees being specified. A District Development Fund has been established, managed by a District Level Health System Committee. The fees collected are meant to be used for specific purposes such as urgent repairs to buildings and equipment and the like. The collection of fees in the State is of the order of Rs. 3.5 crores and augments the resources available for use improvement / maintenance of the hospitals within the district.

The Fund and the Committees originated as part of the KHSDP. The original intention was that the hospital collecting the fees would be entitled to the full amount collected for the purposes mentioned. However, the orders creating the District Development Fund are slightly ambiguous and seem to permit the amount collected in a district being used for any hospital in the district and in some districts the collections in a hospital have not been exclusively used for that hospital. This needs to be corrected. People are likely to willingly pay these charges if they are sure that the amounts would be used in the hospital they use and even enhancements would be tolerated. It is recommended that the user fees system be continued even after the KHSDP ceases as a project. The orders may also state clearly that the use of the fees would be specific to the hospital collecting the amounts.

The designation of the Committee would need review since this is a “hospital development fund and not a general “development fund”. Periodic review of the fee structure would also be necessary.

It would also be desirable to formulate schemes for community insurance. The latter could be based on the principle of Self Help Groups that collect annual contributions from the member households and provide financial help for non- hospitalization cases, or with the participation of the insurance companies, preferably the national companies, for hospitalization cases.

Insurance for doctors

There is likely to be an increasing trend in personal liability suits against government doctors. It would be necessary to provide insurance to the doctors to cover the costs of damages that may be awarded. In cases of negligence attributed to a doctor there would necessarily have to be an internal enquiry within the Department, irrespective of the outcome of any civil / criminal / consumer litigation. This would be more to correct faults in the procedures and systems as also to impose such punishment by the disciplinary authority as may be warranted. There is also likely to be the possibility of damages being awarded against the doctor by the competent courts. In the latter event, insurance cover should be available to the doctor.

It is recommended that a scheme for such insurance cover to doctors in the health services be formulated in consultation with the public sector insurance companies, including the Karnataka Government Insurance Department. The possibility of developing a Group insurance scheme could also be explored since this would reduce the premium costs.

It is recommended that the doctors should pay half the insurance premium from their personal funds. This would ensure that due regard is given to all safety and medical procedures and that complacency consequent on no personal cost does not result in neglect of such safety standards or prescribed procedures.

Financial Implications of the Restructuring of Health Services

The recommendations made in this Report could be broadly classified as follows:

- a) Those that relate to the changes in the basic structure of the health services and involve formulation of new Cadre and Recruitment Rules and associated elements;
- b) Those that relate to “governance” issues such as training, moral building, transparent transfer policies, relationship with the Panchayat institutions and other elements of management;
- c) Those that relate to enhancement of both quality and coverage and building in emphasis on new elements in the health services provided. These include the elements such as expansion and addition of services, better surveillance, better access and reach of services and the like.

The possible financial implications of the recommendations are rather difficult to work out with a reliable degree of specificity because the outlays would depend on the priority in which the recommendations are sought to be implemented.

The first category of recommendations would involve almost no new posts. As suggested elsewhere, the restructuring would largely consist of identifying current posts and fitting them into the new structure. While new designations and Divisions have no doubt been suggested, these would be filled by existing incumbents or by shifting wings from the current projects to the Directorate itself.

The second and third category of recommendations also have cost implications. Good governance is essentially a matter of devoted and sincere management. However, admittedly, there are elements that would need additional funding because what has been recommended is not only enhancement in most services but also new ones. Additional financing would be necessary for elements such as expansion of training facilities so as to cover all districts, upgrading the State Institute of Health and Family Welfare into a full fledged independent training institution of excellence, increasing frequency and content of the training programmes. Recommendations have also been made for the posts of Lady Doctors in the PHCs, setting up blood banks and trauma centres, and other staff needs in certain critical areas. An important element that would need extra financing is the construction of quarters and PHC buildings or repairs to existing ones. Similarly, the improvement of internal transport facilities, providing soft loans for field staff for acquiring two wheelers, providing transport for emergency services and generally enhancing mobility for medical care, would need enhanced financing.

The scale of financing would depend on the phasing of the implementation of these recommendations and, therefore, no attempt has been made to estimate the likely necessary outlays. Mechanisms have been suggested towards the end of this Report for implementation of the recommendations. Part of the process of consideration and implementation would be the estimation of financial outlays that would be necessary and providing for them.

Recommendations

- *A study of the availability and financing of health services provided by the State, by local authorities and by the private sector should be carried out;*
- *Parameters should be evolved for rational allocation of funds to districts and sub-regions to ensure a degree of equity in availability of services, with flexibility being built in for special circumstances, taking into account the health plans of the Zilla Panchayats;*
- *An internal review of specific allocations is necessary to reflect the needs of certain essential activities in a realistic manner. This would be particularly necessary in the case of supporting and infrastructure services. Some of the critical areas, which would need enhanced allocations, would include repairs of vehicles, equipment and buildings, touring for better supervision and administrative charges of the PHC. In this context, a review of the condition of the vehicles must be made to condemn, repair and replace them as may be necessary to enhance supervision capability;*
- *Budgetary cuts should not be made in allocations for health services. Such cuts destroy continuity and levels of services built up over time and only prove counterproductive in the long run;*

- *It should be ensured that release of funds and sanction orders are issued well in time and that the quantum of funds released should be adequate since such releases, in combination with sufficient financial delegations, would ensure maintaining and improving health services;*
- *It is necessary to ensure coordination in the budgeting of the various Departments and Divisions of the health and medical services. This responsibility may be assigned to the Commissioner as a coordinating officer, with authority to call for information from associated Departments / Directorates.*
- *The Planning and Monitoring Division recommended to be established directly under the Commissioner may be assigned this role. To assist this Division, it is recommended that a post of Financial Adviser be created in this Division. This post could be filled by a health economist or by selection, based on experience, from the State Accounts Department or Planning cadres of Government;*
- *The adequacy and implementation of financial delegations within the health services would need review. This may be done by a Committee under the Chairmanship of the Commissioner.*
- *Nonperformance and non-utilization of delegated authority should be important parameters for assessing annual performance;*
- *Internal procedures for monitoring expenditure, particularly in the case of acquisition of equipment and infrastructure, would need to be reviewed to ensure expeditious utilization of allocations in the best manner possible;*
- *The reporting system and formats prescribed for the field level officials, particularly the ANMs, would need to be reviewed to rationalize them and reduce workload.*
- *A comprehensive review of the financial reporting system is necessary so that it becomes part of the HMIS that has been recommended;*
- *The system of user fee is a good feature and should be periodically reviewed to enhance both the base and the scale of fees, if called for. It would be necessary to reiterate that the collection of user fee by a hospital would be exclusively meant for its improvement;*
- *Schemes for community insurance based on Self Help Groups for non-hospitalization cases or with involvement of national insurance companies for hospitalization cases should be formulated and tried out on a pilot basis to develop a replicable model;*
- *A scheme for liability insurance for doctors in the Department, including group insurance schemes, needs to be formulated in consultation with public sector insurance companies, including the Karnataka Government Insurance Department. The scheme may stipulate that doctors meet half the costs of the premium;*
- *Norms for health services based on adequacy of services and quality should be developed as guidelines for formulation of budget requirements. These norms would also provide guidance for assessment of the financial elements of the perspective plan for health services;*
- *Norms in terms of both quality and adequacy, with regard to expected outcomes of expenditure need to be evolved for monitoring of efficiency of use of funds. Such norms must be developed for various functional levels, including the Zilla Panchayats;*

- *The long-term requirements of health services would need to be assessed on the basis of the norms suggested above and on the basis of the perspective plan for health services. In assessing these requirements, the requirements to sustain the assets and services created at considerable cost through externally aided projects must be built in.*
- *Test audit through chartered accountants may be tried on a pilot basis for evaluating the performance of health services at PHC and taluka levels and also to induce a sense of financial discipline. A pilot audit could be instituted in consultation with the Institute of Chartered Accountants. The Planning and Monitoring Division could be the nodal office for this pilot study;*
- *A study is necessary of the scale of health services and the financial outlays on such services in Municipal Corporations and other municipal bodies to assess the total health expenditure on health in the public domain. Such a study would help in assessing the needs in urban areas.*
- *It would be necessary to augment the health budget, to the extent necessary, of the weaker local authorities to enable them to provide essential health care services in their areas.*
- *A study of costs on health services to families may be conducted, after an evaluation of the results of studies already available, for guidance regarding enhancement of services for the economically weaker sections of society at affordable costs;*
- *The staffing pattern would need to be reviewed at intervals to determine both adequacy and excess, and critical shortages. A Staff Inspection Unit trained in Organization and Management principles could be assigned this task;*
- *A financial database may be built up as part of the composite HMIS that has been recommended for the health services. The system of computerization of financial information and of the accounts should be built up as soon as possible.*

Annexure - A

BUDGET ALLOCATIONS AND ACCOUNTS

Revenue – in Crores

Year	2210		2211	
	Medical and Public Health Budget	Accounts*	Family Welfare Budget	Accounts*
<u>1991-92</u>				
Plan	52.74	39.39	50.77	50.38
Non Plan	212.56	202.12	2.95	3.48
Total	265.3	241.51	53.72	53.86
<u>1992-93</u>				
Plan	64.19	52.92	56.31	54.98
Non Plan	244.47	248.56	3.81	3.74
Total	308.66	301.48	60.12	58.72
<u>1993-94</u>				
Plan	97.10	62.60	50.67	59.42
Non Plan	280.33	265.60	4.50	3.63
Total	377.43	328.20	55.17	63.05
<u>1994-95</u>				
Plan	105.45	87.29	88.64	76.55
Non Plan	309.19	289.27	4.45	4.64
Total	414.64	376.56	93.09	81.19
<u>1995-96</u>				
Plan	119.95	119.54	106.64	86.81
Non Plan	337.11	285.44	5.14	4.67
Total	457.06	404.98	111.78	91.48
<u>1996-97</u>				
Plan	191.28	144.26	106.48	74.63
Non Plan	373.46	300.62	5.97	5.58
Total	564.74	444.88	112.45	80.21
<u>1997-98</u>				
Plan	204.27	157.72	115.20	106.09
Non Plan	452.72	354.2	6.57	6.34
Total	656.99	511.92	121.77	112.43
<u>1998-99</u>				
Plan	166.27	147.46	145.41	84.85
Non Plan	516.81	468.4	7.39	7.68
Total	683.08	615.86	152.80	92.53
<u>1999-2000</u>				
Plan	162.05		167.92	
Non Plan	599.48		11.37	
Total	761.53		179.29	
<u>2000-01</u>				
Plan	177.69		195.21	
Non Plan	639.73		10.18	
Total	817.42		205.39	

* Actual expenditure

Annexure - B

BUDGET ALLOCATIONS AND ACCOUNTS

Capital Outlay – in Crores

	4210		4211	
	Medical and Public Health		Family Welfare	
Years	Budget	Accounts *	Budget	Accounts *
1991-92	2.60	2.93	0.65	2.34
1992-93	17.64	6.75	0.50	0.37
1993-94	36.46	9.99	0.50	0.26
1994-95	25.24	10.91	0.50	0.20
1995-96	21.06	13.82	10.50	3.10
1996-97	19.98	7.93	8.80	2.46
1997-98	17.28	68.16	8.80	15.53
1998-99	56.29	87.88	10.50	22.52
1999-00	79.78		39.32	
2000-01	55.38		33.45	
Total	331.71	208.37	113.52	46.78

* Actual expenditure

16. RATIONAL DRUG MANAGEMENT

"A physician who, though unacquainted with drugs and their effects or is ignorant of the nature of disease, yet takes money from the sick (for giving treatment) shall be punished like a thief."

- Sacred Books of the East. Vol.15

16.1 INTRODUCTION

The **Rational use of drugs** requires that patients receive medications appropriate to their needs, in doses that meet their own individual requirement, for an adequate period of time and at the lowest cost to them and their community.

Rational use of drugs in a biomedical context includes the following criteria:

- Correct drug.
- Appropriate indication i.e., the reason to prescribe is based on sound medical consideration.
- Appropriate drug, considering efficacy, safety and suitability for the patient and the cost.
- Appropriate dosage, administration and duration of treatment.
- Appropriate patient-i.e., no contraindications exist, and the likelihood of adverse reactions is minimal.
- Correct dispensing, including appropriate information for patients about the prescribed medicines.
- Patient adherence to treatment.

16.1.1 Definitions:

- **Essential drugs** are those drugs that satisfy the health care needs of majority of the population. They should, therefore be available at all times in adequate amounts and in the appropriate dosage forms.
- **"Quality assurance"** is a wide-ranging concept covering all matters that individually or collectively influence the quality of a product. It is the totality of the arrangements made with the object of ensuring that pharmaceutical products are of the quality required for their intended use.
- **Good manufacturing practice (GMP)** is that part of quality assurance which ensures that products are consistently produced and controlled to the quality standards appropriate to their intended use and as required by the marketing authorization. GMP rules are directed primarily to diminishing the risks, inherent in any pharmaceutical production, which cannot be prevented completely through the testing of final products.
- **Quality control** is the part of GMP concerned with sampling, specifications, and testing and with the organization, documentation, and release procedures which ensure that the necessary and relevant tests are actually carried out and that materials are not released for use, nor products released for sale or supply, until their quality has been judged to be satisfactory. Quality control is not confined to laboratory operations but must be involved in all decisions concerning the quality of the product.

- **Banned drugs:** When the Government of India is satisfied that the use of certain drugs is likely to involve risk to human beings or the said drugs do not have the therapeutic value claimed or purported to be claimed for them or contain ingredients in such quantity for which there is no therapeutic justification and it is necessary and expedient in the public interest to do so, the Government prohibits the manufacture and sale of the said drugs; the drugs are banned.
- **Bannable drugs:** When the use of certain drugs is likely to involve risk to human beings or the said drugs do not have the therapeutic value claimed for them or certain ingredients are in such quantity for which there is no therapeutic justification but the Government has not announced its decision prohibiting them, those drugs may be considered as “bannable drugs”.
- **Hazardous Drugs** are those where the risks outweigh the benefits.
- **Spurious Drug** means a drug:
 - a) imported / manufactured under a name which belongs to another drug; or
 - b) which is an imitation of or is a substitute for another drug or resembles another drug in a manner to deceive or bear upon its label or container, the name of another drug unless plainly or conspicuously marked so as to reveal its true character and its lack of identity with such other drugs; or
 - c) the label or container bears the name of an individual or company purporting to be the manufacturer of drug, which individual or company is fictitious or does not exist; or
 - d) which has been substituted wholly or in part by another drug or another substance; or
 - e) which purports to be the product of a manufacturer of whom it is not truly a product.

16.2 ESSENTIAL DRUGS

The essential drugs lists contain are those drugs selected by the state based on the health needs of its people and relevant to the level of health care (Primary Health Centres, C.H.Cs and Taluka Hospitals, District Hospitals and others). The ‘Criteria for selection of essential drugs’ suggested by WHO is widely accepted. These criteria preclude the registration of any new drug, which is not more effective, safer or cheaper than one that is already in use.

16.2.1 Priority Drug List : is drawn from within the essential drug list to give priority to drug production, distribution and availability for use in diseases having

- Greater mortality
- Greater morbidity
- Severe sequelae
- Communicability

and for use in national programmes such as Tuberculosis, Malaria, Blindness control, Goitre control, immunisation, etc.

16.2.2 Who criteria for selection of essential drugs:

- Essential drugs are those that satisfy the health care needs of the majority of the population; they should therefore be available at all times in adequate amounts and in the appropriate dosage forms.
- The choice of such drugs depends on the pattern of prevalent disease; the treatment facilities; the training and experience of the available personnel; the financial resources; and genetic, demographic, and environmental factors.
- Only drugs, for which sound and adequate data on efficacy and safety are available from clinical studies, and for which evidence of performance in general use in a variety of medical settings has been obtained, should be selected.
- Each selected drug must be available in a form in which adequate quality, including bioavailability, can be ensured; its stability under the anticipated conditions of storage and use must be established.
- When two or more drugs appear to be similar in the above respects, the choice between them should be made on the basis of a careful evaluation of their relative efficacy, safety, quality, price, and availability.
- In cost comparisons between drugs, the cost of the total treatment, not only the unit cost of the drug, must be considered. The cost-benefit ratio is a major consideration in the choice of some drugs for the list. In some cases, the choice may also be influenced by other factors, such as pharmacokinetic properties, or by local considerations, such as the availability of facilities for manufacture or storage.
- Most essential drugs should be formulated as single compounds. Fixed-ratio combination products are acceptable only when the dosage of each ingredient meets the requirements of a defined population group and when the combination has a proven advantage over single compounds administered separately in terms of therapeutic effect, safety, or patient adherence to treatment.

16.2.3 Advantages of the concept of essential drugs:

Preparing a rational list of essential/restricted drugs has several advantages: medical, economic, social and administrative.

Medical Advantages:

- It remains medically and therapeutically sound.
- It limits the potential irrational and hazardous use of drugs and decreases the risks of iatrogenesis.
- It simplifies the process of identifying adverse drug reactions in patients.

Economic Advantages:

- It is economically beneficial to the nation because it maximises the utilisation of limited resources.
- The economy of scale achieved in the larger production of priority drugs reduces cost.
- It curtails the aggressive marketing of non-essential formulations.

Social Advantages:

- It responds to the real health needs of the people
- It facilitates the dissemination of correct information about the drugs to health personnel, medical practitioners and consumers in general.
- It makes it imperative to draw up priorities to meet the most urgent needs of the people for essential health care.

ESSENTIAL DRUGS

The International Conference on Primary Health Care, in Alma-Ata on 12th September 1978 defined Primary Health Care as essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self determination. Provision of essential drugs and appropriate treatment of common diseases are components of primary health care.

The WHO Expert Committee on Essential Drugs attempted to provide guidelines to member countries to help them draw up a list of essential drugs:

"It is clear that for the optimal use of **limited** financial resources, the available drugs must be **restricted** to those proven to be therapeutically effective, to have acceptable safety and to satisfy the health needs of the population. The selected drugs are here called 'essential' drugs, indicating that they are of the utmost importance, and are basic, indispensable and necessary for the health needs of the population".

The key elements in the concept of essential drugs are that, they be:

- Rational
- Scientifically proven
- Therapeutically effective
- Economical
- Socially acceptable

According to Health Action International (HAI) an international pressure group working towards rational drug policies and rational drug use, all drugs must:

1. **Meet real medical need:** their use is likely to improve the quality or extent of medical care.
2. **Have significant therapeutic value:** they must be efficacious, and patients will benefit from them.
3. **Be acceptably safe:** their benefits must far outweigh their risks.
4. **Offer satisfactory value for money:** this favours the introduction and use of drugs that are as efficient and efficacious as alternatives, but cost less.

Administrative Advantages:

- It makes quality control easier because of the limited number of drugs to be monitored.
- It facilitates the streamlining of production, storage and distribution of drugs, because of the limited number of drugs involved.
- It facilitates the fixing of prices as well as the revision/withdrawal of excise duties, sales tax etc.

Advantages to the patient:

- All the medical, economic, social and administrative advantages directly or indirectly benefit the patient.
- Reduces confusion and increases patient compliance.
- Focuses education efforts and facilitates patient participation in his/her own health care.

16.3 LEGISLATION AFFECTING USE OF DRUGS

16.3.1 Drugs & Cosmetics Act, 1940

Objective: The act was passed in 1940 to regulate import, manufacture, distribution and sale of drugs and cosmetics. It is implied that no adulterated, spurious and misbranded drug shall be manufactured in India or imported into India. Similarly no misbranded and spurious cosmetic shall be manufactured in India or imported into the country. The Act also provides for the sale and distribution of drugs only by qualified persons. It also provides for control over manufacture, sale and distribution of Ayurvedic, Siddha, Unani and Homoeopathic Drugs. Control over manufacture is exercised by drug inspectors. Analysis of samples is carried out at drugs control laboratory. The licensing authority exercises control over issue of license for manufacture, sale and distribution of drugs.

Drugs and Cosmetics Act provides for establishment of Drugs Technical Advisory Board (DTAB) to advise central and state governments on technical matters arising out of administration of the act. Drugs Consultative Committee (DCC) aids in securing uniformity in administration of the act through out India. DTAB consists of 18 members with representatives like Director General Health Services, Presidents, Pharmacy Council of India, Medical Council of India, Indian Pharmaceutical Association, Indian Medical Association, Directors of institutes like Central Drug Research Institute, and nominated and elected members. Drugs Consultative Committee has one representative from each state.

16.3.2 The Drugs and Magic Remedies (Objectionable Advertisements) Act 1954:

Objective: To control the advertisements of drugs in certain cases, to prohibit the advertisement for certain purpose of remedies alleged to possess magic qualities.

The objectionable advertisements tend to cause the ignorant and unwary to resort to self-medication or to resort to quacks who indulge in such advertisements for treatments, which cause great harm. It was therefore found necessary in the public interest to put a stop to such undesirable advertisements.

16.3.3 Pharmacy Act 1948

Objective: To regulate the profession and practice of pharmacy and for that purpose to constitute Pharmacy Councils.

16.3.4 Drugs (Price Control) Order - 1995

Objective: To regulate the selling price of bulk drugs and formulations. The number of drugs under the Price Control has been reduced progressively and this has resulted in substantial increases in the price of drugs.

16.3.5 Good manufacturing practices

The Rational use of drugs starts with the manufacture of pharmaceuticals. The concept of Quality Management is an essential criterion.

The concepts of quality assurance, GMP, and quality control are interrelated aspects of quality management.

The basic elements of quality management are:

- an appropriate infrastructure of “quality system”, encompassing the organisational structure, procedures, processes, and resources; and
- systematic actions necessary to ensure adequate confidence that a product (or service) will satisfy given requirements for quality. The totality of these actions is termed “quality assurance”.

16.4 RATIONAL PRESCRIBING, POLYPHARMACY, COMPLIANCE

Programs to ensure rational use of drugs should be an integral part of health and medical care services. The responsibility for promoting rational use of drugs belongs to decision-makers, administrators, and clinicians. It is also the responsibility of health care professionals, consumers, educators and pharmaceutical companies.

Strategies to improve rational prescribing:

16.4.1 Educational strategies include:

- training of prescribers (formal and continuing education, supervisory visits, group lectures, seminars, workshops);
- printed materials (clinical literature and newsletters, treatment guidelines, drug formularies, flyers, leaflets);
- approaches based on face-to-face contact (educational outreach, patient education, influencing opinion leaders).
- prescribing and dispensing approaches (structured drug order forms, standard diagnostic and treatment guidelines, course-of-therapy packaging);
- financing (price setting, capitation-based budgeting).

16.4.2 Regulatory strategies include:

- drug registration;
- limited drug lists;
- prescribing restrictions;
- dispensing restrictions.

16.4.3 The ultimate goals of studying and intervening in drug use practices include:

- improvement of quality of health care through effective and safe use of pharmaceuticals;
- improvement of cost effectiveness of health care through economic and efficient use of pharmaceuticals.

16.4.4 Polypharmacy defeats the purpose of rational use of drugs. At this juncture, it is important to note the importance of drug-drug interactions when a few drugs are prescribed together. To avoid these problems, Drug use indicators can be used for self audit and feedback.

16.4.5 Adherence (Compliance) to treatment is the degree to which patients adhere to medical advice and take medicines as directed. Compliance depends not only on acceptance of information about the health threat itself but also on the practitioner's ability to persuade the patient that the treatment is worthwhile and on the patient's perception of the practitioner's credibility, empathy, interest and concern.

The consequences of non-compliance are:

- Treatment failure as in tuberculosis or sexually transmitted diseases.
- Recurrence or relapse of infection /disease.
- Development of microbial resistance e.g.. Nonadherence with antibiotic therapy.
- Increased risk of transmission of communicable diseases from incompletely cured patients.
- Increased health care costs due to readmissions or reconsultations, lost work timings, travel costs etc.

It is important to understand why drug defaulting occurs. The next step is to develop the communication skills needed to interact with patients so those problems may be identified and resolved. It is equally important to remove barriers to good communication. Finally, it is important to assist the patient to a position of autonomy supported by problem solving and self-management skills.

16.4.6 Misuse of drugs, strategies of drug use, prescription audit

Improving drug use by prescribers, dispensers and the general public helps to reduce morbidity and mortality, and to contain drug expenditure. The challenge is how best to ensure therapeutically sound and cost effective use of drugs, at all levels of the health system, in both the public and private sectors, by both health professionals and consumers.

The three major components are:

- **Rational drug use strategy and monitoring:** Policies and regulations related to RUD
- **Rational drug use by health professionals:** Develop standard treatment guidelines, Essential drugs list, formulary, educational programmes, and other effective mechanisms to promote rational drug use by all health professionals.
- **Rational drug use by consumers:** establish effective systems to provide independent and unbiased drug information to the general public and to improve drug use by consumers.

Drug utilization review and feedback:

Drug utilization review (DUR) is a tool to identify problems in the medication use process: drug prescribing, dispensing, administration and monitoring. As problems are identified, strategies are developed and implemented to improve the use of drugs. If actions are successful, the result will be improved patient care and more efficient use of resources.

Drug and Therapeutic committees play an important role in improving prescribing practices. Their role has expanded in some settings from selecting drugs for formularies to

- reviewing drug requisitions and revising them to fit budget allocations;
- determining which drugs should be made available to each type of health facility (if this is not determined at the national level.);
- developing standard treatment norms for the common illnesses treated in the area or institution;
- establishing prescribing limitations aimed at controlling irrational drug use (for example, limiting certain antibiotics to use only under the recommendation of a consultant);
- limiting the amount dispensed at one time to curb abuse of particular drugs and to reduce waste;
- reviewing antibiotic resistance patterns and revising guidelines for antibiotic use;
- stimulating drug education activities among hospital staff;
- supervising and monitoring prescribing practices.

16.4.7 Principles of antimicrobial use

In hospitals, the choice of which drugs are used may be influenced by such local factors as trends in susceptibility of current isolates, cost of the drugs and in some instances traditional preference or familiarity. **When an antimicrobial is indicated, the choice of agent should be based on factors such as spectrum of activity in relation to the known or suspected causative organism, safety, previous clinical experience, cost, and the potential for selection of resistant organisms and associated risk of superinfection.**

Educational responsibilities: Educational functions of hospital drug committees should include the provision of information on antimicrobial use, supplemented by local decisions and data on new antimicrobials as these become available. Drug committees should encourage the provision of information to clinicians on current antimicrobial susceptibility patterns of organisms from their patients.

Overcoming antimicrobial resistance is a global problem. Unregulated use of antimicrobials has been associated with frightening increases in resistance of major human pathogens. Adherence to the principles of antimicrobial use is increasingly important. Restraint in the use of new and often powerful antimicrobials is the best way to ensure their continuing efficacy because NEWER DOES NOT NECESSARILY MEAN BETTER.

CONTAINING ANTIMICROBIAL RESISTANCE

Antimicrobial resistance among disease causing bacteria represents a serious and growing problem. The problem of resistance can be contained.

- Antibacterial drugs should only be used in situations where a bacterial **infection** is either proven or strongly suspected.
- The type of bacteria involved in an illness and its antimicrobial **susceptibility** pattern should generally be identified before an antibacterial is chosen.
- The antibacterial chosen should be targeted for the **specific organism** to be eradicated rather than opting for a more broad spectrum drug
- Antimicrobial therapy should be **modified** once microbiological results (both pathogen involved and susceptibility patterns) are available.
- Patients should be **counselled** about the proper use of antibacterials and the importance of taking them only as directed.

- Source: *Karnataka Medical Journal*, 2001:71, 16-18

16.4.8 Pharmacovigilance:

An adverse drug reaction (ADR) has been defined by the World Health Organisation as “a response to a drug which is noxious and unintended and which occurs at doses normally used in man for the prophylaxis, diagnosis or therapy of disease or for the modification of a physiological function”.

Medicinal products are safe, that is, the benefits are much greater than the risks. Not all the risks from drugs, better called medicinal products, are known when such a product is first marketed. Since there is no programme of testing prior to the marketing of a medicinal product that will find all the risks of its use in everyday clinical situations, we must learn by experience.

Aims:

Pharmacovigilance is concerned with the detection, assessment and prevention of adverse reactions to drugs. Major aims of pharmacovigilance are:

- Early detection of hitherto unknown adverse reactions and interactions.
- Detection of increases in frequency of (known) adverse reactions.

- Identification of risk factors and possible mechanisms underlying adverse reactions.
- Estimation of quantitative aspects of benefit/risk analysis and dissemination of information needed to improve drug prescribing and regulation.

The ultimate goals of pharmacovigilance are:

- the rational and safe use of medical drugs.
- the assessment and communication of the risks and benefits of drugs on the market.
- educating and informing of patients.

Continuity: Continuity in accessibility and service is a basic feature of a successful pharmacovigilance centre. The centre therefore needs a permanent secretariat, for phone calls, mail, maintenance of the database, literature documentation, co-ordination of activities, etc. Secretarial continuity may be achieved through collaboration with related departments, provided there is sufficient capacity.

16.4.9 Formulary

A formulary manual contains summary drug information. It is a handy reference that contains selected information that is relevant to the prescriber, dispenser, nurse, or health worker. A formulary is drug centred, as it is based on monographs for individual drugs or therapeutic groups. Formularies may or may not contain evaluative statements or comparisons of drugs. Some formularies also include comparative price information, which can help guide prescribing decisions. Intended to be a ready reference for doctors, the formulary contains information which includes the category of the drug, its indications, cautions to be observed when using the drug, contraindications, side effects, drug interactions and dosage forms available. Additional notes on use of the drugs will be provided wherever necessary to use the drugs more rationally and avoid complications in therapy. Thus the prescribing doctor will have a publication providing him objective unbiased information about the drugs that will be prescribed.

A state formulary is based on the national/state list of essential drugs. The production of a formulary is one step in an ongoing process. The development process of these publications is a continual effort, not limited to the one time production. The process involves gaining acceptance of the concept, preparing the text based on the wide consultation and consensus building, implementing an introductory campaign and training activities, and undertaking regular reviews and updates. To maintain the credibility of the information, a system for regular updates and for incorporation of accepted amendments into the next edition is essential.

Hospital formulary: In many countries, especially those with highly developed health systems, hospitals develop their own formulary manuals. The advantage is that the formulary can be tailored to fit the particular requirements of the hospital and to reflect departmental consensus on first choice treatments from the national list of essential drugs. Additional information presented in hospital formularies may include details of recommended hospital procedures, hospital antibiotic policy, guidelines for laboratory investigations and patient management.

16.4.10 Drugs and therapeutic information services

Access to clinically relevant, up-to date, user- specific, independent, objective and unbiased drug information is essential for appropriate drug use. Prescribers, dispensers, and users of medicines all need objective information. **Although access to good drug information does not guarantee appropriate drug use, it is certainly a basic requirement for rational drug use decisions.**

The factors influencing drug use are many and interrelated. No single approach is likely to work. Rather, a variety and combination of strategies tailored to the needs of the different groups in society and the different working environments of health workers will be needed.

Objective drug information

A medicinal product must be accompanied by appropriate information. The quality of information accompanying the drug is as important as the quality of the active substance. Information about drugs and drug promotion can greatly influence the way in which drugs are used. Monitoring and control of both these activities are essential parts of any national drug policy.

DRUGS AND THERAPEUTICS COMMITTEE

Objectives: Each of the larger hospitals should have its own Drugs and Therapeutics Committee. It should define its specific objectives. In general, the objectives may be:

- Formulate and implement policies for selection and use of drugs.
- Develop a hospital essential drug list (based on the Essential Drug List of the State).
- Develop and implement standard treatment regimes for the main diseases in the hospital, based on the guidelines of the State / National Health Programmes
- Carry out drug utilization review in the hospital.
- Provide objective drug information to prescribers and users.
- Carry out educational programmes to improve the prescribing, dispensing and administration of drugs.
- Monitor, report and have action taken on adverse drug reactions and errors in medication.

Criteria that should apply to the development of objective information are that it should be: based on agreed standards; available, accessible and understandable to users; flexible and provided in a variety of forms; relevant to user needs, recognising the multicultural nature of societies; independent, unbiased and with no advertising; developed with user input; and pilot tested for usefulness and acceptability.

The primary role of a DRUG INFORMATION CENTRE is to keep up-to-date with pharmacological and therapeutic literature and disseminate relevant information when it becomes available. A secondary role of the center is to give clear and definitive information on essential drugs and promote their rational use.

16.4.11 Self medication

Self-medication is the selection and use of medicines by individuals to treat self recognized illnesses or symptoms. The increase in self care is due to a number of factors. These factors include: socioeconomic factors; lifestyle; ready access to drugs; the increased potential to manage certain illness through self care; public health and environmental factors; greater availability of medicinal products; and demographic and epidemiological factors.

Responsible self-medication is the practice whereby individuals treat their ailments and conditions with medicines that are approved and available without prescription (OTC-Over The Counter products), and which are safe and effective when used as directed.

Responsible self-medication requires that:

- medicines used are of proven safety, quality and efficacy.
- medicines used are those indicated for conditions that are self-recognizable and for some chronic or recurrent conditions (following initial medical diagnosis).

In all these cases, these medicines should be specifically designed for this purpose, and will require appropriate dose and dosage forms.

Such products should be supported by information, which describes:

- how to take or use the medicines;
- effects and possible side-effects;
- how the effects of the medicine should be monitored;
- possible interactions;
- precautions and warnings;
- duration of use; and,
- when to seek professional advice.

16.4.12 Public education for rational use of drugs

On one side, medicinal drugs represent an indispensable contribution to humankind and to the reduction of morbidity and mortality, but on the other side, it is important to realize that proper use of drugs remains a challenge. Public health problems resulting from drug misuse are serious, and could worsen if they are not addressed now.

The Alma Ata declaration clearly states that **“People have the right and duty to participate individually and collectively in the planning and implementation of their health care”**. But, public education is seldom allocated the necessary human and financial resources and is frequently treated as a marginal activity or one which should only be tackled when the other elements of drug policy have been dealt with. There is a need to increase the priority given to public education.

The overall aim of public education in drug use is to provide individuals and communities with information, and to foster skills and confidence, which will enable them to use medicines in an appropriate, safe and judicious way.

Educational campaigns are unlikely to be effective if conducted primarily from a top-down and biomedical perspective without an understanding of the socio-cultural framework within which decisions are taken.

16.4.13 Ethical criteria for medicinal drug promotion

The main **objective** of ethical criteria for medicinal drug promotion is to support and encourage the improvement of health care through the rational use of medicinal drugs. Ethical criteria for drug promotion should lay the foundation for proper behaviour concerning the promotion of medicinal drugs, consistent with the search for truthfulness and righteousness. The criteria should thus assist in judging if promotional practices related to medicinal drugs are in keeping with acceptable ethical standards.

16.5 PROCUREMENT OF DRUGS IN KARNATAKA

The Government Medical Stores at Bangalore is currently responsible for procurement and distribution of drugs to all the health care institutions, out of the 40% of the budget allotted for purchase of drugs. The rest (60% of the budget) is given to the respective Zilla Panchayats as part of the decentralised governance. They are responsible for purchasing and distributing drugs to the government health care establishments in their districts.

In the current system, the Government Medical Stores prepares the list of drugs and formulations for purchase on the basis of recommendations of the Therapeutic Cum Expert Committee. After approval of the government, the Director of Health and Family Welfare Services issues tender notification in the newspapers and the official gazette to workout a Rate Contract for all essential drugs. The quantities of drugs needed are not mentioned in the Rate contract; this is a major drawback.

Once the Rate Contract is issued, the concerned institutions place their indents before the Joint Director, GMS for the budgetary allotment of 40%. The main drawback is that the indenting institutions do not send the details of their needs in time. The Primary Health Units and Subcentres are not required to send their indents. The Government Medical Stores meet the requirement of these institutions on the basis of the drugs identified by the Committee and the GMS meets their entire requirements.

Transport facility for the delivery of drugs is not available at the GMS. Currently it is the responsibility of the indenting institutions to make arrangements for the same. The inventory system and quality control of the drugs is inefficient.

Deficiencies in the present system in procurement and distribution of drugs.

I Infrastructure:

- Inadequate storage facilities / space at the Government Medical Stores warehouse in Bangalore.
- No storage facilities at the district level.
- Manual inventory system has delayed both procurement and distribution of essential drugs.
- No transportation facilities.
- Excess staff in Group C and Group D cadre at the GMS.
- No sanctioned posts of Pharmacists at the district level.

II Procurement:

- Finalisation of the drug list, tender process and the Rate Contract not done in time.
- Desired quantity of drugs is not mentioned in the Rate Contract list.
- All the essential drugs are not covered in the Rate Contract list.
- Delay in the release of budget allotted for the purchase of essential drugs.
- Procurement of drugs at the Zilla Panchayats done mostly towards the end of the financial year.
- Some drugs are purchased in excess due to lack of coordination between the GMS and the Zilla Panchayats.
- Delay in indenting process at all levels.

III Distribution:

- Due to non availability of certain drugs the indenting institutions are required to collect the drugs 2 – 3 times / year.
- No transportation facilities
- Drugs purchased by some hospitals in containers against the Government of Karnataka policy of blister/ strip packing.

IV Monitoring and Evaluation:

- Currently the monitoring and evaluation system in procurement and distribution of drugs is inefficient.
- The Director of Health and Family Welfare who is in charge of procurement of drugs is unable to devote enough time, since he has too many job responsibilities.
- Non-uniformity due to lack of coordination between the district committees responsible for the purchase of drugs.
- Storage and distribution at the district level is carried out by clerical staff who lack adequate pharmaceutical knowledge.

Quality Control:

- Drug Collectorate staff and laboratory facilities are inadequate.
- Sample testing takes a minimum of 4 – 5 months.

Makapur Committee Report

The Makapur Committee constituted by the Government of Karnataka to look into the drug procurement and distribution system in the State has recommended for pooled procurement by the General Medical Stores. The drugs or to be selected from the essential druglist. It has recommended computerisation and re-organisation of the General Medical Stores and District Medical Stores to bring in better monitoring and evaluation and greater efficiency in the procurement and distribution of essential drugs. The Task Force recommends that Makapur Committee Report be adopted with necessary modifications.

16.6 DRUGS CONTROL DEPARTMENT

The main objectives of Drug control is to ensure that all the drugs that are made available to people who use them for prevention, mitigation, treatment and cure of diseases and disorders, are of standard quality, purity and strength.

The philosophy of drug control is that unless quality control discipline embracing ancillary requirements are imposed by law at all stages of import, manufacture, storage, sale or distribution, people cannot be assured of the quality and safety of medicines used by them. Besides, these medicines are required to be sold at reasonable prices fixed by the Government and also to ensure that unwary public are not mislead by objectionable advertisements in respect of drugs for certain ailments, diseases and disorders.

Presently, in the State of Karnataka the number of licensees is as follows:

1.	Drug Manufacturing licenses	-	229
2.	Drug Loan licenses	-	274
3.	Cosmetics manufacturing licenses	-	74
4.	Cosmetics Loan licenses	-	7
5.	Blood Banks	-	112
6.	Approved Laboratories	-	7
7.	Sales Establishments	-	13,377

16.6.1 Drug Inspectors

The Task Force appointed by The Government of India to suggest measures for enforcement recommended that for every one hundred sales establishments there should be one Drugs Inspector and for every 25 manufacturing licenses there should be one Drug Inspector.

Drugs Inspectors are required to carry out the following duties:

1. To draw samples of Drugs and Cosmetics from manufacturers, distributors, wholesalers, retailers, Government Hospitals, District Health Officers, private hospital and nursing homes.
2. To inspect each licensed premises at least twice in a year as a mandatory requirement as per the law to ascertain the compliance of various drug rules
3. To monitor the movement of spurious drugs and not-of-standard quality drugs which are already in the market and to see that the drugs which are opined as spurious, adulterated, misbranded, not-of-standard quality are not stocked or sold.
4. To check the prices of drugs and to see whether the prices marked by the manufacturers are as per the notifications issued by the Government from time to time.
5. To investigate any complaint received.
6. To launch prosecution against the offenders and to follow up cases.
7. To scrutinize the advertisements for any possible violation under Drugs and Magic Remedies (objectionable advertisements) Act and to take suitable action against the offenders.

To fulfill the above duties and responsibilities covering more than 13,000 licensees, the department needs at least 130 Inspectors. Presently, the staff strength sanctioned is 46 inspectors and thus there is a short fall of 84 inspectors. Out of 46 sanctioned posts, 8 posts are vacant.

16.6.2 Drug Testing Laboratory

The provisions of Drugs and Cosmetics Act are very critical in the field of medical care as success of any treatment depends on the quality of drugs consumed by the patients. The primary responsibility of ensuring that quality drugs are manufactured and distributed rests with industry. However, with the advent of newer synthetic drugs, biotechnological products, it is very essential that proper quality control measures are to be taken by Government agencies to see that situation is not exploited by unscrupulous elements for pushing spurious drugs. Hence, role of Drugs Testing Laboratory assumes more importance than ever.

Drug Testing Laboratory was established in Bangalore in 1964 and facilities in this laboratory needs to be upgraded both in terms of technical personnel and other infrastructure facilities including equipments, library facility etc. There is a need to establish an exclusive "Reference Standard" and "Working Standard" section that is essential for carrying out tests and analysis for various drugs. Unless the laboratory has reference standards, the sample received cannot be analysed to certify the quality of drug.

Presently the laboratory is analyzing about 2,500-3,000 samples per annum. By analyzing 2,500-3,000 samples per year, it is not possible to assure the quality of all drugs moving in Karnataka. The number of samples analysed should at least be increased to 15,000 per year.

At present, on an average 150 samples are analysed by each junior chemist per annum. The strength of Junior Chemists required to meet the task ahead is at least 100. Presently, there are only 30 Junior Chemists posts sanctioned out of which 8 posts are vacant. Junior Chemists have to be supported with laboratory technicians and laboratory attendants for drug analysis.

Karnataka Antibiotics and Pharmaceutical limited (KAPL)

KAPL is a Government of Karnataka Company, manufacturing medicines of quality. During 1999-2000, the company produced medicines of the value of Rs.7510 lakhs with an export turnover of Rs.709 lakhs. KAPL won the Prime Minister's MOU Award for Excellence for the achievement of the targets for 1989-99. The State has to make full use of the services of this State-owned, profit making company to make available quality drugs for the people of the State.

Recommendations

- *Procedures should be established for quantifying the essential drugs required for the State, to optimize the pooled procurement through the Rate Contract.*
- *The Zilla Panchayats may make use of the rate contract for 90% of its requirements, reserving 10% for discretionary purchase.*
- *Procedures should be established for developing, disseminating, utilizing and revising Standard Treatment Guidelines.*
- *Procedures should be established for developing and revising Essential Drug Lists and a State Formulary based on treatment of choice for the level of expertise- primary, secondary, tertiary, speciality and teaching.*
- *Every hospital should have a Drugs and Therapeutics Committee with defined responsibilities for monitoring and promoting quality use of medicines. Specific guidelines for Rational Use of antimicrobials and analgesics are a must.*
- *Use Generic names of drugs for procurement, supply and prescribing.*
- *Implement problem based training in pharmacotherapy in undergraduate medical and paramedical education based on Standard Treatment Guidelines to promote Rational Use of Drugs.*
- *Encourage targeted, problem-oriented in-service educational programs by professional societies, universities and the ministry of health, and require regular continuing education for licensure of health professionals. Involve the Karnataka State Pharmacy Council.*
- *Stimulate an interactive group process among health providers or consumers to review and apply information about appropriate use of medicines. The Karnataka State Pharmacy Council may be involved in this training programme.*
- *Train pharmacists to be more active members of the health care system & to offer better advice to consumers about health and drugs.*
- *The concept of Drug Information should be popularized among the health care professionals and the public. Drug Information Centre must be accessed for unbiased, object information. The Services of the Karnataka State Pharmacy Council may be utilized.*
- *Monitor adverse drug reactions so that appropriate and early measures can be taken to ensure safe use of drugs.*
- *Encourage active involvement by consumer organizations in public education about drugs and allocate government resources to support these efforts.*

- Procedures should be established to ensure proper labeling of drugs. The packages and the inserts should be adequately labeled to enable people to use drugs properly. It should also mention most common side effects and danger signals to enable patients to contact the doctor immediately. Special precautions in case of children, pregnant and lactating mothers, and old people should be mentioned clearly. The labeling should be printed in adequately bold size. The labeling in case of O.T.C. drugs should be more detailed, giving all indications, contraindications, common side effects and danger signals. The labeling should be made in English, Hindi and the regional language.
- The Government Medical Stores and the District Stores to be re-organised to ensure proper and on-time distribution of all essential drugs. Monitoring of drugs to be received from the centre, their actual receipts and supply to be monitored vigorously.
- The Drugs Control Department to be re-organised with sufficient number of Drug inspectors and Drug testing laboratory.
- Establish a "Reference Standard" and "Working Standard" section for carrying out testing and analysis of drugs.
- Have a functional library for the Drugs Control Department.
- Regulation of Drug Company's promotional activities is important. Promotional literature for pharmaceuticals, guidelines for sponsorship of symposia and other scientific meetings, advertisements, free samples of prescription drugs for promotional purposes, Post-marketing scientific studies, surveillance and dissemination of information should conform to guidelines.
- A strategic approach is to be developed to improve prescribing in the private sector through appropriate regulation, long-term association and collaborations with professional associations.
- Systems to be established to routinely monitor key pharmaceutical indicators in order to track the impact of health sector reform and regulatory changes.
- In view of the trends in increased use of medicines, it is essential to facilitate the establishment of regulation and registration of traditional medicines.
- The services of the Karnataka Antibiotics and Pharmaceuticals Limited to be made full use of, for the production of quality drugs needed by the State.

17. LAW AND ETHICS

*“ Among the most important freedoms that we can have
is the freedom from available ill health and escapable mortality”*

— Prof. Amartya Sen.

17.1 GENERAL

Legislation is designed for the regulation of the health profession and practice, and health care providers (persons and institutions). Ethics is wider. It is self-regulation by the health profession. Law tells us what we can (and more often, cannot) do; ethics tells us what we ought to do.

Constitutional Protection to Health Care

Many articles of the Constitution of India provide for health and health care of the people.

Article 47: “ The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties....”

Law

Legislation in health helps in implementing the health policy of the government and in protecting the society. There are a large number of Acts, Rules and Regulations, Central and State, affecting health care and health care providers. There are laws that have direct effect on health care, but there are many more which indirectly affect the health of the people. Among them are:

- The Medical Council of India Act, 1956
- Indian Medicine Central Council Act, 1970
- Homoeopathy Central Council Act, 1973
- Dentists Act, 1948
- Nursing Council Act, 1947
- Pharmacy Council Act, 1948
- Mental Health Act, 1987

There are laws affecting primarily industry, agriculture, food processing, pollution of air, water and others. There are other laws such as the Law of Torts (based on the common law principle), Criminal Liability (Indian Penal Code) and the Consumer Protection Act, under which action can be taken for negligence or malpractice.

These Acts, the rules framed under them and the amendments regulate the Health Professions. The Councils have their State branches. All these are expected to play important roles in ensuring quality of care and health professions education.

Registration of health professionals

While **registration** under the appropriate council (Medical, Dental, Nursing, Pharmacy) is mandatory for the practice of the profession, the law does not require renewal of registration in many cases (e.g., Medical Council). This leads to a situation where:

- the exact number of persons practicing the particular health profession is not known; and
- the health professional may not be updating his/her knowledge, skills and attitude, which can lead to incompetence.

There is need for periodical renewal of registration (say, once in 5 years), with evidence of having effectively participated in **continuing education** in the appropriate discipline.

Health Care Establishments Regulation

Karnataka had the Karnataka Private Nursing Homes (Regulation) ordinance, 1976 and the Rules there under. But, this was never implemented. A new bill has been introduced: The Karnataka Private Medical Establishments (Regulation) Bill, 1998. This bill also needs considerable changes to make it effective. There is need for an Act, which will be regulatory and facilitatory, with **Quality Assurance** and appropriately defined **standards**, relevant to the size, type and location of the health care institutions (hospitals, nursing and maternity homes, physiotherapy establishments, blood banks, pathology laboratories and others).

Accreditation

The voluntary process of accreditation of health care institutions can assure quality of service. Standards have to be worked out by a recognised body. The institution is then inspected on behalf of the accrediting body. Based on the results of the inspection, the health care institution may be given accreditation. It is a process of self-regulation and is in vogue in many countries.

Consumer Protection Act, 1986

An important piece of legislation, affecting doctors and health care institutions, is the Consumer Protection Act, 1986. The recent judgment of the Supreme Court has brought out the applicability of the Act. It comes into effect when there is deficiency in service by way of negligence or incompetence. The medical profession has a duty of care. When there is breach of that duty of care, the Act and the Rules there under come into play. Service rendered on payment of charges comes under its purview. It is applicable even where service is rendered on payment by some and free to others, the recipient of such service (paid or free) will be a consumer under the Act.

There have been arguments for and against the inclusion of doctors and health care institutions under the purview of the Act. There is a suggestion that in view of the possibility of frivolous complaints which can affect the reputation of the doctor or health care institution even if the complaint is found to be wrong, the complaint may be screened by a committee with a senior medical professional or the redressal forum must have a senior doctor (chosen from a panel) when hearing complaints against the doctor or health care institution.

Drugs and Cosmetics Act, 1940

This Act and the Rules there under (1945) and the amendments control the different aspects of the manufacture, classification, storing and use of drugs.

Right to information

A new bill has been introduced as an Ordinance : The Karnataka Right to Information Bill, 2000. This will lead to greater transparency in health care services.

Problems in implementation

There are many problems and loopholes in implementation of the law. One such problem is **female foeticide**. To prevent female foeticide, the *Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Act*, 1994 was enacted. But it has failed to achieve the objective. Medical termination of pregnancy is *permissible (Medical Termination of Pregnancy Act, 1971 and Rules, 1975)*; hence, foeticide, including female foeticide, is legal. What is illegal is prenatal sex determination and *sex selective abortion*. The person who conducts the sex determination (usually the *ultrasonologist*) communicates only orally; there is no written evidence. One doctor identifies the sex of the foetus; another doctor terminates. What is lacking is ethics.

Human Organs Transplant Act, 1994

The purpose of the Act is to stop or at least reduce the unethical practice of the sale of organs (usually kidneys) by unrelated live donors and to promote cadaver transplants. Though the Act and Rules laid down penalties for offences related to organ trafficking, paid organ transplantation of unrelated donors continues. There are middlemen and touts to induce sale of kidneys by poor live donors. The Authorization Committee has not been able to reduce the unrelated transplants; so also, there has been failure to motivate cadaveric transplants.

17.2 QUACKERY

Unqualified and untrained persons often practice medicine. Such unlawful practice may take different forms:

- totally unqualified person practicing medicine;
- a person qualified in one system of medicine, practicing another system, in which he or she is not qualified (cross practice).

Wrong medication can lead to adverse reactions. Inappropriate use of drugs can cause drug resistance. Delay in proper diagnosis and treatment can be hazardous, preventing cure or causing complications. The Karnataka State Branch of Indian Medical Association has brought forward a draft Karnataka Quackery Prohibition Bill, which is now under consideration of the Government.

The Supreme Court in the Civil Appeal 2016 of 1996, dated 25 April 2000 (D.K. Joshi vs. State of U.P. and Ors) gave the following directions:

“The Secretary, Health and Family Welfare Department, State of U.P., shall take such steps as may be necessary to stop carrying on medical profession in the State of U.P. by persons who are unqualified/ unregistered and in addition shall take the following steps.

- (a) All District Magistrates and the Chief Medical Officers of the State shall be directed to identify, within a time to be fixed by the Secretary, all unqualified/ unregistered medical practitioners and to initiate legal actions against these persons immediately;
- (b) Direct all District Magistrates and the Chief Medical Officers to monitor all legal proceedings initiated against such persons;

- (c) The Secretary, Health and Family Welfare Department shall give due publicity of the names of such unqualified / unregistered medical practitioners so that people do not approach such persons for medical treatment;
- (d) The Secretary, Health and Family Welfare Dept. shall monitor the action by all District Magistrates and all Chief Medical Officers of the State and issue necessary directions from time to time to these officers so that such unauthorized persons cannot pursue their medical profession in the State."

Karnataka can follow these directions of the Supreme Court.

Citizen's Charter and rights of patients

Legislation is needed to protect the right to health and patient's rights. The courts are aware of this situation. The health care institutions, governmental and private, can voluntarily display the Citizen's Charter, including the rights of patients. In Karnataka, a beginning has been made in some Government and private hospitals and in the institutions under the IPP VIII programme.

Public Health Act

There is need for a comprehensive Public Health Act that will replace the Mysore Public Health Act. The Central Bureau of Health Intelligence, New Delhi, had brought out the "Model Public Health Act" in 1987. The new Act in the state may be based on the Model Act, taking into consideration later developments and especially decentralization through the Panchayat Raj and Municipalities enactments (73rd and 74th amendments to the constitutions).

Tobacco

The Karnataka Prohibition of Smoking in Show Houses and Public Halls Act, which will replace the Mysore Public Health Act 1963, prohibits smoking in show houses and public halls in the State. This Act was a consolidation of two earlier Acts in Mysore and Coorg. It is necessary to update this Act, knowing the hazards of using tobacco in any form and of smoking (active and passive).

17.3 ETHICS

Ethics deals with the right conduct, with adherence to values. The branch of ethics that deals with problems in health is biomedical ethics. It assures the profession and the public a standard of professional relationships and behaviours. It is necessary that all health professionals are aware of the code of conduct and practice accordingly.

Cardinal principles

There are four main principles in medical ethics.

1. **Beneficence:** Doing good. Medical intervention must be for the good of the patient. There is a hierarchy of values in Medicine.
 - Preservation of life. There is sanctity of life and right to life.
 - Relief of suffering and care of the person.
 - Cure of the disease.
 - Prevention of disease.
 - Promotion of health.

There are many cases of inadequate care and unnecessary investigations and useless, avoidable treatment

2. **Non-maleficance:** *Primum non nocere*: first of all do no harm. Harm can happen through negligence or incompetence or lack of concern for the patient, e.g.; irrational use of drugs can cause harm.
3. **Autonomy:** Every person (patient) has the right to determine what shall be done to his / her body. It is part of individual liberty and choice. We were accustomed to *paternalism* and subscribe to thinking “doctor knows best”. But the situation today is different. Medical intervention should be carried out only with the voluntary, informed consent of the patient and the community, when it affects the community. The duty of the doctor is to inform the individual (and the community) of the pros and cons, benefits and risks of the proposed intervention, listen to the person (and the community) and take suitable action. A major cause of action is that the doctor did not get **informed consent**.
4. **Justice:** Doctors are responsible to the society. Justice includes social and distributive justice and non-discrimination. Included in this concept are honesty, integrity and equity. Medicine in an unjust society is likely to be unjust. Can our health programmes help to reduce the injustice? Will our programmes be in favour of the needy and the disadvantaged?

Code of conduct

To guide the medical practitioner on the professional path, there are a large number of codes of conduct, ancient and modern. Among them are:

- Atreya anushasana.
- Charaka Samhita
- Susruta Samhita
- Oath of Hippocrates
- Declaration of Helsinki on Human Experimentation.
- Geneva declaration.
- Tokyo declaration on torture.
- International Code of Medical Ethics.
- Code of Ethics of Medical Council of India.
- ICMR guidelines on Research.

The best known among them is the Hippocratic Oath (Hippocrates of Cos, Greece). Most of the graduates in Medicine take a modified oath at the time of graduation or registration. The Code of Ethics of the Medical Council of India, 1970, is binding on the profession in India. It is elaborate and consists of general principles and duties of the doctor to the patient, to the profession, to each other and the public.

Teaching and learning of medical ethics

The Rajiv Gandhi University of Health Sciences has included the teaching and learning of Medical Ethics in the curriculum. It is necessary that it be implemented seriously so that all graduates are aware of the problems and are enabled to tackle them ethically.

The ethical problems facing the health professions concern mainly three areas :

- Professional conduct of the health professional in relation to the patient, other health professionals and the public.

- Ethical problems at the beginning and end of life.
- Problems of social justice and equity in health.

Problems relating to professional conduct

- Malpractice, negligence, incompetence, unethical advertisements.
- Autonomy of patient, beneficence, non-maleficence
- Informed consent
- Confidentiality; privacy
- Irrational use of drugs / technology
- Organ transplantation
- Human experimentalism
- Conduct towards colleagues, peers and public.

Problems connected with the beginning and end of life

- Right to life; quality of life
- Genetics
- Fertility, contraception, abortion
- Sex pre-selection, female foeticide, infanticide
- Assisted reproductive technology
- Care of terminally ill
- Euthanasia

Problems involving social justice and equity in health

- Right to health
- Health policy; allocation of resources; costs to patient, family and society.
- Distributive justice in health care
- Commercialization of health care.

Professional Misconduct

The Medical Councils constituted under the enactments in India are vested with powers to investigate and take disciplinary action against the doctor for professional misconduct, which is also referred to as "infamous conduct". The State Medical Council has the power to remove the name of the doctor indulging in professional misconduct from the register, thus disentitling them from practicing as doctors. But the powers are seldom exercised.

HIV infection and AIDS

Important legal and ethical issues have arisen concerning HIV infection and AIDS :

- Public health notification; individual good vs. public good.
- Confidentiality; consent for testing vs. mandatory testing.
- Right to health care and medical attention.
- Employment of HIV positive persons and pre-employment testing.

A major ethical problem is the stigmatization by the society of persons with HIV infection.

Councils

Karnataka Medical Council

The Karnataka Medical Council was established by an Act of the legislature (Act no. 34 of 1961). The Council provides registration to doctors qualified in Modern Medicine. The Council is empowered to enforce the code of medical ethics. It can conduct enquiries regarding professional conduct, negligence, moral turpitude, false certification and infamous act. It can award punishment to the erring doctor, by way of warning, suspension or removal of the name from the register.

The Karnataka Medical Council has suggested some amendments to the Act.. Among them are

- empowering the council to remove quackery by suitable legislation;
- the Consumer Protection Courts to consult the Council while deciding on cases where doctors are involved;
- the President of the Indian Medical Association, State Branch, may be an ex-officio member of the Council; and
- Continuing Medical Education to be made compulsory for all medical practitioners.

Other Councils

The other Councils i.e., Karnataka ISM&H Council, Karnataka Dental Council, Karnataka State Pharmacy Council and Nursing Council, should renew the registration of their members, continue CME on regular basis for better performance. Necessary amendments should be made in their acts.

Forensic Medicine

There is need for better training of medical officers at various levels in dealing with medico legal cases, conduct of postmortems and appearance in the Courts of Law. This training can form part of the induction training and be reinforced periodically.

Recommendations

- *Implement effectively the existing laws affecting health and health care, and especially the laws such as the Human Organs Transplant Act, 1994 and the Prenatal Diagnostic Techniques Act, 1994.*
- *Renew the registration of health professionals in the State once in 5 years, with evidence of sufficient credits of having participated in approved continuing education programmes.*
- *The respective councils should ensure that the members of the profession practice ethically, following their codes of conduct. This may be done through an amendment of the respective Acts.*
- *Enact a comprehensive law to ensure registration and quality assurance of all health care institutions in the state, on the lines suggested by the Task Force and forwarded to the Government. Promote accreditation.*
- *Enact a comprehensive Public Health Act, based on the Model Public Health Act (1987) with suitable modifications.*
- *Examine in depth the problem of quackery and take effective steps to stop it.*

- *Arrange for monitoring of the activities under the Human Organs Transplant Act, by an independent agency, to stop the sale of organs.*
- *The Appropriate authority for Organ Transplantation may be reconstituted with inclusion of representatives of voluntary organisations.*
- *Every health care institution to have a charter of Citizen's Rights and Rights of Patients. The Charter should be displayed prominently.*
- *Update the "Prohibition of Smoking Act". Increase the tax on tobacco products. Ensure the welfare of tobacco growers when cultivation is restricted and of beedi workers when manufacture and use is reduced.*
- *Make the teaching/learning of ethics as part of health professional's education.*
- *Make the health personnel aware of the codes of conduct. Have training programmes in medical ethics for all health care personnel and particularly the doctors and nurses.*
- *Appoint a Deputy Director (Law & Ethics and Forensic Medicine) working under the A.D. (Planning and Monitoring).*

Appendix

Laws and Health Care : Some of the Acts

1. Karnataka Private Nursing Homes (Regulation) Ordinance 1976 and Rules 1976. Karnataka Private Medical Establishments (Regulation) Bill, 1998.
2. Medical Termination of Pregnancy Act, 1971 and Rules 1975.
3. Pre-natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994 and Rules 1996.
4. The Transplantation of Human Organs Act, 1994 and Rules, 1995.
5. Drugs and Cosmetics Act 1940 and Rules, 1945; The Drugs (Control) Act, 1950; The Drugs (Prices Control) order, 1995.
6. Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954.
7. The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 and Rules, 1996.
8. The Mental Health Act, 1987.
9. Epidemic Diseases Act, 1897.
10. Consumer Protection Act, 1986 and Rules, 1987.
11. Maternity Benefit Act, 1961.
12. Dangerous Drugs Act, 1930.
13. Narcotic Drugs and Psychotropic Substances Act, 1985.
14. Poison Act, 1919.

15. The Industrial Disputes Act.
16. The Water (Prevention and Control of Pollution) Act, 1974.
17. The Air (Prevention and Control of Pollution) Act, 1981.
18. The Environment (Protection) Act, 1986
19. Hazardous Wastes (Management and Handling) Rules, 1992.
20. Insecticides Act, 1968.
21. Infant Milk Substitutes Act, 1992.
22. Prevention of Food Adulteration Act, 1954 and Rules 1955.
23. Fatal Accidents Act, 1855.
24. Personal Injuries (Emergency Provisions) Act, 1962.
25. Personal Injuries (Compensation, Insurance) Act, 1963.
26. Medical Degrees Act, 1916.
27. Indian Medical Council Act, 1956 and Rules, 1957; Medical Council of India (Regulations on Graduate Medical Education) 1997.
28. Indian Medical Council (Amendment) Act, 1993.
29. Indian Medicine Central Council Act, 1970.
30. Homoeopathy Central Council Act, 1973.
31. Dentists Act, 1948.
32. Nursing Council Act, 1947.
33. Pharmacy Act, 1948.
34. Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975.
35. The Mysore, Ayurvedic & Unani Practitioners Registration and Medical Practitioners Miscellaneous Provisions Act, 1961 and Rules 1964.
36. The Minimum Wages Act, 1948.
37. The Biomedical Waste (Management and Handling) Rules, 1998.

18. INDIAN SYSTEMS OF MEDICINE AND HOMOEOPATHY (ISM&H)

*"By doings well the duty which is nearest to us,
the duty which is in our hands now, the make ourselves stranger ;
and improving our strengths in this manner step by step,
we may even reach a state in which it shall be our privilege
to do the meet coveted and honoured duties in life and society."*

- Swami Vivekananda

Introduction

A large part of our population utilizes Indian Systems of Medicine, Homoeopathy and other systems of healing, to meet health needs. A variety of community based local health cultures also exist. But, the budget allocation and support to these systems and traditions is very meagre.

Many life threatening infectious diseases have been effectively controlled, leading to increased life expectancy. This has created situations of challenging chronic diseases. The role of Indian Systems of Medicine, Homoeopathy, and other traditions effectively combating these chronic diseases that are refractory, non-life threatening and often disabling, is important. ISM & H have been providing health care at grass root levels for several years. Its importance has been recognised and the Department of ISM&H was bifurcated from the Department of Health & Family Welfare in 1972.

Despite the popularity of these systems, it is observed that they have problems in the Government as well as in the private sector. Problems exist at several levels in medical education, health services, research, manufacturing and practice. **There is an urgent need to review these problems, undertake remedial measures, revive and revitalize these systems in order to offer a range of safe, cost effective, curative, and preventive therapies-which could be very useful in realising the goal of 'health for all'.**

18.1 DEPARTMENT OF INDIAN SYSTEMS OF MEDICINE AND HOMOEOPATHY (ISM&H)

The Department renders Medical relief to the Public in Ayurveda, Unani, Homoeopathy, Naturopathy, Yoga and Siddha systems of medicine. It regulates Medical Education, Drug Manufacturing, publication of books and practice of medicine in these systems.

Table 18.1 : ISM&H Budget : 2000-2001

Budget: 2000 - 2001		(Rs. in lakhs)	
	Plan	Non-Plan	Total
State Sector	320.00	1539.36	1859.36
C.S.S	7.90	-	7.90
District Sector (Z.P)	319.28	1314.00	1633.28
Total	647.18	2853.36	3500.54
Grand Total:	35.01 Crores		

Health Services

There are 93 Hospitals and 609 Dispensaries functioning in the State as on 1-4-2000. The Systems wise break up is given hereunder.

Table 18.2 : ISM&H Hospitals and Dispensaries

Name of the System	No. of Hospitals	Bed Strength	Dispensaries
Ayurveda	68	1077	521
Unani	11	202	48
Homoeopathy	07	100	35
Nature Cure	03	26	05
Yoga	03	15	—
Siddha	01	10	—
Total	93	1430	609

Ayurveda

16 Ayurvedic Hospitals are at District Level of which the following three serve as teaching hospitals.

Table 18.3 : Ayurveda Teaching Hospitals

Institute	Bed Strength
1. Sri Jayachamarajendra Institute of Indian Medicine, Bangalore	225
2. Government Ayurvedic College and Hospital, Mysore	140
3. Government Taranatha Ayurvedic Hospital, Bellary.	85

There are 38 Taluk Level Hospitals; 14 Ayurvedic Hospitals are in rural areas, each with bed strength ranging from 5 to 10. There are 521 Ayurvedic Dispensaries in the State.

Unani

There are 11 Unani Hospitals and 48 Unani Dispensaries in the State. The Unani wing (100 beds) attached to Sri. Jayachamarajendra Institute of Indian Medicine, Bangalore serves as a teaching hospital for Government Unani Medical College, Bangalore.

Homoeopathy

There are 35 Homoeopathic Dispensaries in the State. The Government Homoeopathic Hospital functioning at Bangalore with 40 beds serves as a teaching hospital to Government Homoeopathic Medical College, Bangalore. Four more 10-bedded Homoeopathic Hospitals are functioning at Somavarpeta, Hassan, Mysore and Shimoga. Two more 10-bedded hospitals have been sanctioned at Bijapur and Kolar.

Naturopathy

One 6 bedded Nature Cure Hospital is functioning at Mysore and another two at Bangalore and Bellary with 10 beds each. There are 5 Nature Cure Dispensaries in the State.

Yoga

Yoga wings with 5 beds each have been established in teaching hospitals at Bangalore, Mysore and Bellary. Here Yoga classes are being conducted regularly for the public and for the patients of the Hospital.

Siddha

A Siddha wing with 10 beds has been provided in the Sri Jayachamarajendra Institute of Indian Medicine, Bangalore.

Utilisation of Health Services

Several hospitals, dispensaries and institutions were established decades ago; some nearly a century old. Some of them are located in prime places of the state like Bangalore, Mysore, Bellary, Shimoga, Bijapur, Tumkur, Hassan etc., During the last couple of decades, the utilization of these health services has nose dived due to two factors: lack of infrastructure and personnel.

Infrastructure

There is no ISM&H hospital in the State that can offer all the necessary diagnostic facilities, hygienic wards, toilets and bath room, linen, basic communication equipment like intercoms, telephones, ambulance, herbal gardens, mattresses, water, sewage and waste disposal systems, electricity, fans, special pay wards, well equipped pharmacy and stores, labour room, panchakarma theatre, kitchen etc. Information and registration centres to assist and help the patients who are desirous of admission are not available.

Personnel

Most dispensaries and hospitals lack the necessary strength of medical, para-medical and other staff. Norms have to be worked out. The existing staff lack drive, dynamism and courtesy for patient care. There are many instances of ignorance related mishaps, uncaring attitudes of nursing staff and pharmacists; while housekeeping staff are not duty bound.

18.2 MEDICAL EDUCATION

There are 61 colleges under the Indian Systems of Medicine and Homoeopathy. System wise details are given in the table.

Table 18.4 : ISM&H Colleges as on 01-04-2000

System	Colleges				Grand Total
	Government	Aided	Private Unaided	Total	
Ayurveda	3	5	35	40	43
Unani	1	—	1	1	2
Homoeopathy	1	—	13	13	14
Naturopathy And Yoga	—	—	2	2	2
Total	5	5	51	56	61

The total intake capacity in these colleges is 2570 students (Ayurveda - 1760, Unani - 80, Homoeopathy - 665, Naturopathy and Yoga - 65)

A Post-Graduate Degree Course in Ayurveda (M.D) is being conducted in the colleges mentioned below.

Government Ayurvedic Medical College, Bangalore:

a) Dravyaguna b) Shalya tantra c) Shalakya Tantra : each 7 seats (intake)

Government Ayurvedic Medical College, Mysore:

Kayachikitsa - 10 seats (intake)

Government Taranatha Ayurvedic Medical College, Bellary:

Rasashastra and Bhyshajya Kalpana - 7 seats (intake)

Unani

The Government Unani Medical College at Bangalore is functioning with an intake of 50 students. One Private Unani Medical College is functioning at Gulbarga with an intake of 30 students. Two more colleges were sanctioned, one at Tumkur and another at Bijapur, but they are not started so far.

National Institute of Unani Medicine

It is being established in Bangalore by the Government of India, The Government of Karnataka has agreed to pay Rs.5 crores lumpsum payment in 4 years instead of releasing 1/3 share of total Recurring and Non-Recurring expenditure every year.

Homoeopathy

One Government Homoeopathy Medical College is functioning in Bangalore with an intake of 40 students. 13 Private Homoeopathic Medical Colleges are functioning at different places of Karnataka. A Private Homoeopathic Medical College at Humnabad (40 seats) was sanctioned but not started so far.

Naturopathy

A Diploma course conducted at the Government Nature Cure and Yoga College, Mysore has been upgraded to a Degree course which will be started during this year. One private Nature Cure and Yoga College is functioning at Ujire with an intake of 40 students. Another Private Nature Cure and Yoga College was sanctioned at Moodbidre (25 seats) during 1999-2000 but not started so far.

Research

There is a Research wing attached to Sri.Jayachamarajendra Institute of Indian Medicine, Bangalore. Clinical Research is being conducted for Tamaka Swasa disease.

A Clinical Research Unit in Unani system of Medicine has been established at Sri Jayachamarajendra Institute of Indian Medicine, Bangalore by the Government of India. Here research on skin diseases, Psoriasis, Eczema and Rheumatoid Arthritis are in progress.

18.3 DRUG CONTROL

The Department regulates manufacture of Ayurveda, Unani and Homoeopathic Medicines and sale of Homoeopathic medicines from December 1976 onwards. The number of licences issued so far, for manufacture of Ayurveda, Unani and Homoeopathic medicines and sale of Homoeopathic medicines are as follows.

Table 18.5 : Manufacturers and Licence Holders as on 1-4-2000

Systems	No. of Manufacture Licence Holders	No. of loan Licence Holders	No. of Sales Licence Holders	
Ayurveda	225	32	—	
Unani	12	—	—	
Homeopathy	11	—	Whole Sale	59
			Retail	114
Total	248	32		173

Government Central Pharmacy, Bangalore

Ayurveda and Unani medicines are being manufactured at the Government Central Pharmacy, Bangalore and supplied to all the Government Ayurvedic and Unani Hospitals and Dispensaries in the State.

Drug Testing Laboratory

This unit has been established to ensure the quality of raw drugs and medicines at the Government Central Pharmacy, Bangalore.

Herbal Gardens

Herbal Gardens are being maintained at Bangalore, Mysore and Bellary which are attached to respective Ayurvedic Colleges. Further the "Dhanwantri Vana" has been developed on 30 acres of land near Bangalore University campus. About 500 medicinal plants are raised so far.

Publication Cell

There is a publication cell in the Directorate. So far, 58 books relating to Indian Systems of Medicine and Homoeopathy are published by this Cell.

Practice of medicine

There are two Statutory Boards to regulate the practice of Medicine.

- i) Karnataka Ayurvedic and Unani Practitioners Board, Bangalore:

This Board regulates the practice of medicine in Ayurveda, Unani, Siddha, Naturopathy and Yoga. The total number of practitioners registered as on 01-04-2000 are as follows.

Table 18.6 : ISM&H Practitioners registered (1-4-2000)

Ayurveda	13,834
Unani	901
Integrated System of Medicine	2,376
Naturecure & Yoga	79
Siddha	2
Total	17,192

ii) Karnataka Board of Homoeopathy System of Medicine, Bangalore.

The Board regulates the practice of medicine in Homoeopathy. The number of practitioners registered in Homoeopathy as on 01-04-2000 are 6,326.

Private institutions

There are 56 private colleges of ISM &H which have their own hospitals with inpatient and outpatient facilities. Two Ayurveda colleges run by SDM educational Trust, Kuthapady at Udupi and Hassan have full fledged facilities including surgical theatres. ALN Rao Memorial Ayurvedic Medical College at Koppa has an exclusive Ayurveda hospital and research centre, conducting post-graduate level research and educational activity.

A.M.Shaikh Homoeopathy Medical College, Belgaum is one of the oldest college and hospitals with the highest number of admission facility of 100 seats, followed by Fr.Muller's Homoeopathy Medical College, at Kankanadi, Dakshina Kannada having 75 seats.

SDM College of Naturopathy and Yogic Sciences, Ujire, D.K., has admission strength of 40 seats.

Budget Provisions of the Department and Expenditure during the last 3 years (Rs.in Lakhs)

Table 18.7 : Budget Provision : 1997-98

Scheme	Budget Estimates	Expenditure	Surrender	Reasons
Plan	150.00	99.05	50.95	During the year 1997-98 there was a plan cut. A sum of Rs. 50.96 lakhs under Plan was surrendered. Under the Non-Plan schemes due to non-filling up of vacant posts and savings a sum of Rs.159.28 lakhs was surrendered. Under the CSS a sum of Rs.2.17 lakhs expenditure was incurred as against the provision of Rs.6.00 lakhs. The Govt. of India is reimbursing the amount spent initially.
Non-Plan	1196.35	1037.07	159.28	
C.S.C (100%)	6.00	2.17		
Total	1352.35	1138.39	210.23	

Table 18.8 : Budget Provision : 1998-99

Scheme	Budget Estimates	Expenditure	Surrender (Laps)	Reasons
Plan	200.00	128.69	71.31	The new proposals were sanctioned during the end of the financial year. Hence the new posts could not be filled up. So also new hospitals and offices could not be started and due to low progress under capital outlay by PWD there is savings under plan. Due to vacant posts and control over other expenditures there is savings under Non-Plan.
Non-Plan	1296.12	1082.69	213.43	
C.S.C (100%)	6.00	4.23	-	
Total	1502.12	1215.61	84.74	

Table 18.8 : Budget Provision : 1999-2000

Scheme	Budget Estimates	Expenditure	Surrender (Laps)	Reasons
Plan	270.00	241.24	28.76	Due to slow progress under capital outlay there is savings under Plan. Due to vacant posts and control over other expenditures there is savings under Non-Plan.
Non-Plan	1547.43	1464.94	82.49	
C.S.C(100%)	8.00	5.76	-	
Total	1825.43	1711.94	111.25	

18.4 PROBLEMS

1. Vacancies

In order to share, support and assist the efficient functioning of department with the Director, a Post of Joint Director was created by the Govt. in the year 1999. This is lying vacant till date, and has to be filled up to improve functioning.

2. District level officers

At present there are four Deputy Directors located in four revenue divisions; they are not able to attend the Zilla Parishad (ZP) monthly meetings because the meetings of all the ZPs fall on the same day. Besides, the administration and services are centralized, making it difficult to reach district and subdistrict levels. Hence there is a need for district level officers.

3. Pay Disparities

3.1 Teaching and non-teaching cadres

Most dispensaries of Indian Systems of Medicine and Homoeopathy are functioning in the rural areas; 30% of these are located in remote areas. The physicians of ISM & H are rendering medical service to the rural people in Ayurveda, Unani and Homoeopathy system of Medicine. The cadres of lecturer, Assistant Professor, Professor and Principal (teaching) exist in the collegiate branch of the department of ISM&H.

There is disparity in the pay scales among the non teaching and teaching cadres even though the basic qualification prescribed for the initial appointment to Group-B posts of non- teaching and teaching cadres viz., physician Grade – II and lecturer is a degree awarded by a University. This disparity in the pay scales among physicians and teachers prevailed in the 1977, 1982, 1987, 1994 revision of pay scales. However the Government, in its order-dated 27.8.1997 merged the posts of physician GR-III with physicians GR-II. The pay scales of physician GR-II and lecturer were made equal.

Now government has extended the benefit of AICTE scales of pay to the teaching staff of the colleges of ISM & H, creating a disparity between the non-teaching and teaching cadres in the department.

3.2 Disparity between pay scales of ISM & H doctors and allopathic doctors

The minimum qualification for admission to the course, the duration of the course, the period of internship is one and the same for both ISM & H and Allopathic Medical courses. The duties and responsibilities of officers of both systems are similar.

The Government of India, Government of Tamilnadu and Government of Uttar Pradesh are understood to have granted equal pay scales to the ISM & H doctors and Allopathic doctors.

4. Inadequate Infrastructure

- Most of the dispensaries and hospitals of ISM & H are in remote places and housed in sub-standard rented or donated buildings. These are unattended to for repairs and renovations and do not offer a congenial atmosphere for health care.
- There are fewer dispensaries (below 10) in Kodagu, Udupi, DK districts and only one hospital in Davangere, Dakshina Kannada, Dharwad and Gadag Districts. Udupi does not have a government hospital. In these districts ISM & H are popular among the public.

5. There have been efforts of mainstreaming of ISM & H at national level in order to utilise the expertise of the practitioners of these systems for RCH & National Health programmes. The immediate availability of these doctors in the centers of mainstream medicine is important for consultation and referral.
6. Many ISM & H dispensaries are supplied with insufficient quantity of prepared medicines which are constituted mainly with herbs and herbomineral ingredients.
7. ISM & H dispensaries and hospitals are established in the available accommodation and infrastructure. Eventually it has resulted in non-uniformity in respect of plan, space, infrastructure, staff and etc.

Given the above situation there has been no provision of residential accommodation for the work force in these dispensaries and hospitals. This has led to medical and paramedical staff searching for accommodation away from their place of work and often out of the village, town or even district. The reason for irregularity in attendance and services has been attributed to these factors.

8. **Laboratory Services**

The need for accurate clinical diagnosis with well-supported laboratory services is indisputable. Many of the major ISM & H hospitals are running with primitive and out dated laboratories. These hospitals do not even have facilities to do the routine laboratory investigations. Even major ISM & H hospitals are not equipped with laboratory for advanced investigations, like bio-chemical, microbiological, ECG and ultrasound scanners.

9. Doctors of ISM & H were recruited on contract basis a couple of years ago for an urgent need to streamline and efficiently deliver health care service. Their appointments must be regularized following performance appraisal.
10. The Boards of visitors of all the major hospitals of the state have not been re-constituted for the last several years.
11. None of the dispensaries and many of the hospitals are not connected through telephone facilities. This has resulted in lack of communication and coordination between the central and peripheral organisations.
12. Non-communicable chronic diseases are on the increase. The therapeutic approaches of detoxification, rejuvenation and rehabilitation are well delivered through a group of Ayurvedic procedures called Panchakarma as well as Ksharasutra especially in ano-rectal disorders like fistulas. District hospital needs to be fully equipped for these procedures.

13. **Referral system**

In order to undertake special treatments and consultancy for the patients attending dispensaries, there is need for an establishment of referral service system.

14. With an increased attendance for OP department of the major hospitals situated at Bangalore, Mysore and Bellary, there is not enough space, equipments, and other infrastructure to offer better service.

15. **Procurement of Medicines**

The existing budget allocation for procurement of medicines in dispensaries has been Rs.18,000/- per annum which is very insufficient to cater to all the patients who attend these dispensaries. It is essential to increase this budget substantially.

16. Medical education

- At present the admissions to UG courses in ISM & H is based on merit in pre-university examinations along with the quotas of reservation. A CET examination may be instituted for admission to these courses.
- There are complaints that the top scorers in P.U. Examination who get admitted in order of merit at Bangalore, Mysore and Bellary Government Ayurvedic medical colleges fail or under score in the undergraduate examinations and the average and below average PU students who are admitted to private Ayurvedic medical colleges in the state are awarded high merit; as a result, the graduates of the private colleges secure PG seats based on the so-called merit. A common entrance test for admission to postgraduate examination could reduce this problem.
- The Central Council of Indian Medicine has stipulated 14 separate departments of different disciplines in Ayurveda at UG level with qualified people in the faculty, whereas there are only eight departments in all the Government Ayurvedic Medical Colleges. There is a mismatch between qualifications and the subjects taught. This has resulted in reduction of quality of teaching, knowledge and expertise. It is also possible that the CCIM (Apex Body) may at any time de-recognise these colleges of Ayurveda.

17. Hostel Facility

Many of the major medical colleges are not having hostels for boys pursuing UG & PG studies.

18. Disparity in stipend

The candidates of under graduate courses at the end of 4 1/2 years study will have to undergo 1 year of internship, during which a monthly stipend of Rs.2250/- is paid; interneers of modern medicine for the same period are receiving Rs.3250/- per month. Similarly the students of ISM & H pursuing M.D. Course for three years are receiving Rs.3100/-, Rs.3300/- and Rs.3500/- per month as compared to their counter parts in modern medicine who are given Rs.5200/-, Rs.5400/- and Rs.5700/- per month in I, II and III Year respectively.

19. Training Facilities

With the expansion of health care facilities along with provision of specialty treatment, it has been very difficult to offer these without the availability of trained paraclinical staff. Similarly to propagate these systems to the community, there are no trained and informed health extension workers.

Even in case of nursing staff there has been a need for training in ISM & H treatment methods, as they have to handle the patients in a very special way. There is also a need for trained pharmacists who have to handle these natural medicines with a scientific method of dispensing.

20. The practitioners of ISM&H who are rendering their services in remote places are deprived of having an access to the information and updating of their knowledge and skills. There is need for Continuing Medical Education.

In 1974, Government of Karnataka had introduced a reservation of two seats in all the four Govt. Medical Colleges (Bangalore, Mysore, Bellary and Hubli) for the graduates of Ayurveda, who were interested in pursuing M.B.B.S. course. A couple of years later it was withdrawn for unknown reasons.

21. Public Awareness Programmes

- The need for further popularising these systems for the lay public is necessary. There has not been either an effort or a unit for the purpose under DISM & H
- Awareness regarding these systems at primary educational levels is not existing. The inclusion of these subjects in the syllabus and curriculum would enhance the recognition of values of these systems.

22. Drug control

- **Government Central Pharmacy**

At present the government Central Pharmacy is manufacturing Ayurvedic and Unani drugs to cater to all the dispensaries and hospitals in the state. These are manufactured with outdated technology, with least consideration for quality, stability and efficacy. The pharmacy manufactures medicines in insufficient quantities to dispense all through the year. The pharmacy has to comply with the recently notified GMP guidelines by Government of India. It has to be upgraded within two years.

- **Homeopathic Drug Manufacturing**

The department does not have facilities to manufacture Homoeopathic drugs to cater to all the dispensaries and hospitals in the State. This has to be rectified.

- With the advent of enforcement of Good Manufacturing Practices (GMP) the small-scale industries have to comply with the test of quality when they apply for manufacturing licence.

- **Assistant Drug Controller**

The number of manufacturers of ISM&H is increasing due to the demand and need for these drugs in the market. The drug licensing authority under DISM&H has only two drug inspectors for Ayurveda, Unani & Homeopathy. The work pressure for the authority is increasing with the acceptance of loan licensing procedures in addition to main manufacturing units. There is need for more drug inspectors.

- **Homoeopathic Drug Inspector**

The manufacture of Homoeopathic medicines is different in terms of ingredients and technology from that of other Indian systems of medicine. At present the licensing authority does not have a qualified homoeopathic doctor as a drug inspector.

23. Collection, Preservation and Utilisation of Medicinal Plants

There are several major global and national pharmaceutical manufacturing companies operating in Karnataka. Besides them, there are many medium and small-scale manufacturers who are also operating internationally. They require many plant materials for their products. There are no Nodal Agencies either at Govt. level or NGO level available to cater to the needs of these industries or control and support the operations in collection and preservation in natural environment as well as cultivation of these plants which are in demand.

24. Research

- The research is a part of continuing process, which would help to update the knowledge, make contemporary the application of ancient knowledge, as well as provide an evidence base for all these systems to be accepted in the scientific world. There is only one research unit in Bangalore which is devoid of a senior research officer to guide the research projects. The Research Advisory Committee is not functioning.

- With the impetus to research on these ancient systems which needs to be put to test with modern scientific tools, there is a need for establishment of a multi-disciplinary team in the field of ISM&H medicine.

- **Deputy Registrar of ISM&H at RGUHS**

Post graduate research project protocols are submitted to RGUHS as a mandatory procedure for the award of MD degree. These protocols must be screened by the Health University with the help of experts who are qualified or trained in these systems.

Similarly at undergraduate levels there is confusion regarding the matters of examination, syllabus, training etc. Hence, there is a need to appoint a qualified person from ISM&H as a Deputy Registrar.

- The research grants by the government to post graduate students is a very meager amount of Rs.600/- for the course, which is insufficient. This results in dilution of interest to do research amongst the PG students

There has been no financial support for research amongst practitioners or private institutions or private institutions or private industry. Research and Development activities are facing an acute financial crunch that has resulted in disinterested attitudes towards conducting any substantial research projects that may include health promotion, prevention of disease and unique therapeutic measures.

25. The promotional opportunities for all technical cadres in the department of ISM&H has been delayed, which has resulted in demoralization of the work force in this department

26. **Medical practitioners**

- With the increased awareness, interest and need of the ISM&H health care services, the Government should include these qualified practitioners in the list to be considered as authorized medical attendants or area doctors which would benefit the patients.

27. It is necessary for the Govt. to update the list of reimbursable drugs and should add the cost of panchakarma and other rejuvenation therapies for reimbursement to its employees who undertake these treatments. Furthermore the insurance companies should cover the cost of these specialized therapies for the employees of public sector undertakings, banks and other institutions.

28. **Registration / regulation**

The government should also come out with a list of authorized ISM&H health service centers run by the private individual or institutions for reimbursement facility, after working out the norms.

29. In order to recognize and reward the traditional practitioners of ISM&H who are economically backward and involved in social service the government has sanctioned Rs.250/- per month as pension. This has to be increased as the existing amount is very meager.

30. The private practitioners depend on the raw materials for making medicinal products to be dispensed in their dispensaries. To procure these raw materials that are mostly herbal, they approach the forest and other natural habitats for collection of plants and their parts. This has resulted in the depletion of many medicinal plant genetic resources.

31. It is necessary to provide about 100 acres of land for DISM&H in each district for cultivation of medicinal plants which should be harvested and utilised by the Government Central Pharmacy.

32. There is a departmental service manual for ISM&H written several years ago. It is necessary to revive and review this manual for immediate implementation, which would streamline the whole organisation.
33. There is need for an in-house journal. This may be published in collaboration with the Pharmacy Council and should be useful to doctors of ISM&H and other health workers.
34. It is necessary to ensure that doctors qualified in a particular system practise only in that system (avoiding cross-practice). They must be happy to own that system. It has been reported that ISM&H qualified doctors prescribe allopathic medicines. This should be discouraged.
35. Training in hospital management is necessary for doctors in charge of the hospitals.

Recommendations

- *The sanctioned post of Joint Director is to be filled. In the absence of C & R rules a competent senior person may be placed in charge and duties may be assigned.*
- *Existing senior doctors may be designated as **District ISM&H** officers of the respective districts. In 11 districts where there are already hospitals, it can be implemented immediately. These district level officers posts are to be filled by selection based on merit-cum-seniority.*
- *Parity in pay scales with those of modern medicine should be considered on priority.*
- *Dispensaries and hospitals are to be renovated and modernised after a survey by the Department. There is an urgent need to construct special wards with all amenities atleast in the major hospitals attached to teaching institutions at Bangalore, Mysore and Bellary.*
- *Establish or relocate units of ISM&H with necessary infrastructure at CHCs, Taluka and District hospitals.*
- *Establish herbal gardens in ISM&H units, PHCs and CHCs for utilisation and demonstrations for the public with the help of forest department (social forestry).*
- *There is a need for developing uniform norms for dispensaries and hospitals, with regard to plan, space, infrastructure and staff.*
- *There is an urgent need for providing residential accommodation near the place of work for physicians of ISM&H. If Government accommodation is not available, houses may be taken on rent.*
- *There is an urgent need to make available the facilities for investigative procedures with qualified and technical staff in all the hospitals. This can be done in collaboration with the hospitals of modern medicine at various levels.*
- *The services of contract doctors need to be regularized, based on performance appraisal.*
- *The Boards of Visitors are to be re-constituted immediately in order to improve the functioning of the hospitals.*
- *Provide all dispensaries and hospitals with a working telephone.*
- *Establish the specialty units of panchakarma and ksharasutra in all district hospitals first and then taluk hospitals.*

- *Fill up the vacant post of Siddha Physician in the 10-bedded Siddha ward at Sri. Jayachamarajendra Institute of Indian Medicine, Bangalore.*
- *The major hospitals are to be upgraded and enlarged to meet the requirements and demands with adequate human force, equipments and other accessories, after a need assessment.*
- *Construct new well-planned OP blocks in all the major hospitals of Bangalore, Mysore and Bellary.*
- *There is a need to enhance the budget provision for procurement of medicines in dispensary atleast to a sum of Rs.36,000/- p.a; budget provisions to be enhanced in general.*
- *As per the norms of admission to modern medical colleges the application of CET and counseling should be applied to ISM&H courses (under graduate and post graduate) with immediate effect.*
- *There is need for appointment of a person qualified in ISM&H as Deputy Registrar in RGUHS, to look after the needs of the colleges and students in ISM&H.*
- *Steps have to be taken to provide hostel facilities in all the major medical colleges*
- *The disparity in stipend between interneers of ISM&H and modern medicine may be studied and action taken to remove the inferiority feeling or low esteem prevailing amongst students of ISM&H*
- *Study the need for developing appropriate training courses with special modules for para-clinical staff such as Masseurs, Nurses, Health extension workers and pharmacists and take necessary action*
- *The facilities of the State Institute of Health & Family Welfare should be made use of for the training of ISM&H personnel. The training should include hospital management for those in charge of hospitals.*
- *CME courses must be periodically conducted to update knowledge and skills of the practitioners of ISM&H. Sufficient credit hours must be earned for the renewal of registration by the Karnataka Ayurveda and Unani Practitioners' Board and Karnataka Council for Homeopathic Medicine. Professional and Technical support may be obtained from the teaching institutions (Both Private and Government).*
- *Ten seats may be reserved in the MBBS course in the Government Medical Colleges for eligible ISM&H graduates, 7 for Ayurveda, 2 for Homeopathy and 1 for Unani, to bring about integration.*
- *All the teaching institutes of ISM&H must take up defined geographic areas in order to effectively execute public awareness programmes and for primary health care (through the dispensaries and mobile units). The need for trained ISM&H health workers for extension work may be studied and action taken so that they can take up health promotion work in the periphery.*
- *Introductory lessons on ISM&H systems viz., Ayurveda, Unani, Naturopathy, Yoga, Siddha and Homeopathy should be included in the curriculum of schools and colleges, which would create awareness among the children. The institute of ISM&H should take up school health programmes in the neighbouring schools.*
- *An expert committee may be appointed to consider the upgradation of the Government Pharmacy after studying TAMPCOL of Tamil Nadu or AUSHADHI of Kerala.*
- *A Homeopathic Drugs Manufacturing Unit may be started to make medicines in sufficient quantities to meet the demands of the entire state.*

- To meet the increasing needs of ISM&H, a post of Assistant Drug Controller may be created and filled up by a suitably qualified candidate
- Qualified homeopathic doctor may be appointed as drug inspector to inspect the Homoeopathic manufacturing units.
- The department of ISM&H must prepare essential drug lists for each system. A medicinal plant board may be established which would ensure quality, consistency and price.
- Drug testing laboratory to be established for ISM&H, with all the needed facilities. The services of this laboratory may be made available to private manufacturers also, to improve the quality of the medicinal products.
- Encourage research. Appoint a Senior Research Officer in ISM&H. Reconstitute the research advisory committee. Rajiv Gandhi University of Health Sciences may be requested to establish an interdisciplinary research board, comprising of experts of ISM&H, modern medicine and scientists of basic sciences.
- RGHHS may be requested to frame standard guidelines for protocols for thesis / dissertations for postgraduate courses in ISM&H and to create a post of Deputy Registrar for ISM&H
- The financial support to PG researches may be enhanced to Rs.2,500/- p.a. The monthly pension for ISM&H physicians to be enhanced to Rs 2000/- per month.
- Encourage research in ISMH through financial support to interested and dedicated practitioners and private academic institutions.
- Externally Aided Project benefit should be extended to ISM&H to achieve wider coverage, enhance the knowledge base and application in the field of health promotion and prevention of diseases.
- Government should provide about 50-100 acres of land for ISM&H in each district for cultivation of medicinal plants, which should be harvested and utilised by the Government Central Pharmacy.
- The government should effect immediately the promotions that are due and implement time bound promotions
- Appoint a qualified person competent in editing / publishing to effectively bring out publications including health promotion materials
- Ensure effective utilisation of budget allotted and augment the allocation where necessary.
- Doctors qualified in a particular system of medicine should practice only that system; cross practice must stop in the interest of the public and to develop the particular system of medicine.
- Have a comprehensive HMIS for all the institutions and services under ISM&H.

VISION STATEMENT

There is increasing, widespread interest and recognition of the Indian Systems of Medicine and Homoeopathy and other systems and traditions of healing, based on evidence of efficacy in many preventive therapeutic and prophylactic situations. Collaborative studies in several research institutions, on developing effective adaptogenic and anti-stress regimes, show the possibility of development of world class health interventions through integrated research, so that they not only serve the country and the state, but also entire humanity.

The example of Japan Medical Association's vision for its healthcare system reform, in the form of systematization of health promotion programs at all stages of life, stands as a model for all countries to emulate. The positive concept of "health", that incorporates promotion of healthy living as well as the prevention of disease, forms the core strength of these ISM&H systems. This can be harnessed for a better healthy society of the future.

The health care coverage, which has suffered a set back, all these years for a variety of reasons already well recognized even by the WHO lends credence to the responsibility, role and importance of these ISM&H systems in the years to come. There is need for all round support, with plans to efficiently utilize the services of these systems.

The next two decades will see dramatic changes in the health needs of the populations. In our regions, non-communicable diseases such as heart disease, autoimmune diseases, depression and others are adding on to the traditional enemies, infectious diseases and malnutrition, as the leading causes of disability and premature death. This poses serious challenges to the health care systems and force difficult decisions about the allocation of resources. The help of ISM&H systems, is necessary.

These systems were not considered at par with the mainstream health services and have not been given due recognition, which has brought about an inferiority feeling amongst the practitioners. This has resulted in the dismal participation of these systems, although the people believe and utilize the services of these systems at personal levels. There is a great need for support and recognition from mainstream medicine and for the research programs for developing an evidence base for their therapeutic utility.

With the recognition of the importance of fostering and developing positive health, there is need for executing research projects in areas such as – lifestyles and "lifestyle diseases", patient behaviour studies and the behavioural medicine field, health investment and its effects and effectiveness, assessment of health risks and integration of health information at all stages of life. This will help to bring about total health coverage for the people and improve the quality of life.

18.5 COMMUNITY BASED LOCAL HEALTH CULTURES

Introduction

Folk health culture is diverse and varied. It is ecosystem and ethnic community specific. The health knowledge in the folk stream has been generated over centuries by sensitive and intelligent people – tribals, farmers, artisans, shepherds, barbers, housewives, wandering monks – there are also some elements in it that have been drawn from the classical codified stream. The folk stream has knowledge of home remedies, food and nutrition, obstetrics, bone setting, treatment of poison, chronic and common ailments, acupressure, pulse diagnosis, use of plants, animals and minerals.

The carriers of the folk health culture are primarily millions of ordinary households. The culture also has specialized carriers who have no legal status but enjoy a definite social legitimacy in their own localities. These specialized carriers are birth attendants, bonesetters, herbal healers, healers who treat 'visha' i.e. poisonous snake, scorpion bites and rabies, vets etc. These carriers are seen in all rural areas in the country.

Transmission of knowledge takes place through family and community tradition, in a people to people process guided by local cultural codes. There are a few groups researching, preserving and promoting these valuable local health traditions. However, there is no state support and in fact there is alienation in the culture and practices of the state health systems and local health culture. Folk health traditions on the whole are being eroded, resulting in a loss of resources and allies to the movement of health for all.

Recommendations

- *Revitalization of household health traditions and folk medicine by increasing the understanding of the preventive, promotive and curative practices of local health cultures among health personnel (through educational institutions) and through the educational system in schools and colleges.*
- *Recognising and utilizing folk practitioners such as dais (traditional birth attendants), herbal practitioners/ healers etc. as part of the primary health care systems.*
- *Systems for transmission of knowledge need to be strengthened and supported possibly through the State Institute for Health and Family Welfare and the district training centres.*
- *Conservation, cultivation and propagation of medicinal plants and other natural resources in collaboration with the Dept. of Forestry and NGOs.*
- *Research into local folk health traditions and culture to be supported through the proposed research body.*

18.6 OTHER HEALING PRACTICES

Various other systems and forms of healing outlined below are being increasingly used by people. Most are non-drug based and non-invasive. They give people greater control over their own health and healing.

a. Tibetan System of Medicine

The Tibetan System of Medicine (Amchi system) is an ancient one in vogue in India, including Karnataka. The system traces its origin to Lord Buddha and uses many components of Ayurveda. Treatment is by use of herbs, minerals, animal organs, spring and mineral water.

Tibetan system is being practiced wherever there are Tibetan settlements. There are many dispensaries in India, of which 5 are present in Karnataka. The system is popular among non-Tibetans also. Tibetan system has a Medical Institute at Dharmashala, Himachal Pradesh, a Tibetan Medical College with hospital, a museum of drugs and instruments. The Central Council for Research in Ayurveda, under the Ministry of Health and Family Welfare has a Research Wing to carry out clinical research into the drugs used in Tibetan Medicine.

b. Reiki

- Discovered and propounded by Dr Mikao Usui in 1800, it is the ancient Japanese art of healing by the 'laying on of hands'. Reiki meaning universal energy in Japanese.
- A powerful and spiritual experimental technique that opens up the vision, heart, palm chakras, third eye and other psychic abilities.
- Providing holistic, positive energy without any side effects, it can be undergone independently or with other medical treatments.
- It enhances the body's natural ability to heal itself and maintains equilibrium of both body and mind to promote complete relaxation, thereby raising the life-force energy.
- The therapist first makes a body scan of the seven chakras to determine individual needs. Actual therapy follows when the universal energy flows through the therapist into the client.

The various stages in the entire process:

The First degree stage

This is the primary stage where the patient gets attuned as the universal energy activates the patient through transmission, for approximately four hours, over some days. When the attunement is established, information is given on four levels of energy – physical, mental, emotional and spiritual.

The Second degree stage

Slightly more advanced, great changes in the energy levels are achieved here and symbols are introduced to unlock the chakras that will improve health.

The Third degree stage

In this most advanced and powerful stage, the patient is taught the intricate process of passing on the reiki energy and ways of enhancing personal growth, transformation and increased enlightenment.

c. Acupressure

Based on the principle of manipulation of crucial pressure points in the body, acupressure cures difficult and chronic aches and pains – backaches, spondylitis, abdominal cramps, neurological disorders, arthritis etc. These pressure points, over a 1000 of them, are often embedded in or near a muscle or tendon. Safe and effective, it involves no pin-pricks, no heat formentation, nor any chemical or electric stimulations. However, it is a very exact art and should be carried out by a trained practitioner, absolutely sure about the pressure points to be tapped and the correct pressure to be applied.

d. Acupuncture

- The modern name is derived from the Latin words Acus (needle) and Punctura (penetration). It is, however, an ancient Chinese art of healing the sticks needles into a patient's skin or even muscles to correct imbalances in the 'yin' & 'yang' of the body.

- Yellow Emperor's Classic of Internal Medicine, one of the oldest medical texts in the world, comprises a special section called 'Magic Gate', which is devoted to this therapeutic style.
- Although modern acupuncture charts more than 2000 points in the body, located along invisible energy called 'meridians', traditionally there were only 365.
- The western explanation for this is that a needle inserted at specific acupuncture point of the body releases certain chemical substances, that activate neuro-transmitters, which then pass on nerve impulses to the brain to obtain the desired effects. Must be performed by trained practitioners only.

e. Magnet Therapy

A system of medicine that is gaining popularity and recognition all over. It is based on the principle that the earth is one big magnet and that all our bodies are surrounded by magnetic waves emanating from the earth and other spatial bodies, including the sun and the moon. This natural magnetism influences and supports all forms of life. Disease is caused by the imbalance between the various electro-magnetic forces present within our bodies. Thus strategic placement of magnets on specific parts of the body can cure chronic ailments that standard medicine might find difficult to control.

Some of the basic principles of this therapy are

Use of mutually opposite properties of the North and South poles. The use of two methods – Unipolar and Bipolar. The use of only one pole on a diseased organ gives desired results but only if diagnosis and selection of poles is correctly made. During the course of treatment the patient is made to sit or lie down on an insulating wooden chair or bed, for best results. While shape or size of the magnet does not matter, for sensitive organs as eyes, brain and heart, weak magnets need to be employed. Never given on a full stomach, pregnant women should opt out of it and all metallic objects that absorb magnetic waves should be taken off before treatment. In the treatment of skin diseases, a cloth should be used between the magnet and the skin.

Recommendation

Currently no specific recommendations are being made to integrate these forms of healing into the system. However, it is advisable that all physicians are aware about these systems, as many patients use more than one system simultaneously.

19. PANCHAYAT RAJ AND EMPOWERMENT OF THE PEOPLE

*“All the wealth of the world
cannot help one little Indian Village
if the people are not taught to help themselves”.*

- Swami Vivekananda

Health Management by Panchayat Institutions

After decades of providing basic health care and building up an impressive and massive infrastructure for this purpose, through a network of Sub Centres and PHCs, it is recognized that these services, in the rural areas, are neither universal in reach nor adequate in quality. Health services cannot be said to be reaching those who need it most, when they want it or in adequate measure. This is evident from the high levels of infant and maternal mortality and prevalence of high morbidity in the rural population. There are many reasons for this lack of access to health services in the rural areas including skewed distribution of facilities, inadequacy of administrative supervision, lack of training in public health or management at the micro-level, insufficiency of supporting infrastructure such as communication and commutation facilities and the like. However, one of the main deficiencies in the system has been the lack of mechanisms that permitted those entitled to these services to demand them, monitor their availability and supervise their management.

Universal health care, by definition, must be what the people perceive as their need at a point of time and must be available where the people are. It would have to be community based and the mechanisms for intervention by the community must be built in. The latter is appropriately through the panchayat institutions that have been established in the State. The panchayat system provides for the **involvement and active participation of the people in health** programmes and services through local community organizations.

The advantages of involvement of the community through panchayat institutions in implementation and management of health services are that the focus on vulnerable and special groups would be enhanced, preventive measures would get emphasized and services would, instead of being on a uniform pattern be modified to meet specific local needs. Inter-sectoral coordination with programmes closely related to health such as sanitation and water supply would also be facilitated. It is necessary to involve the panchayat institutions in the administration of basic health services at all the three levels – village, taluka and district. In essence, the panchayat system entitles rural communities to assert their **right to health services** in terms of adequacy, quality and accessibility. However, it also casts a responsibility on the community to assist in ensuring that their entitlements are met. The system, thus, provides for not just entitlements but also assigns responsibility. In this process, the larger goal of **empowerment of the community** is, over time, achieved.

The involvement of the panchayat in providing health services has many objectives. The community evolves from being just recipients of information and services to being able to vocalise their needs and expectations and assume a more “interventionist” role. The rural population would be able to identify health needs relevant to them and project these as requirements. Community participation would also improve the perceptions of the people

regarding better health practices and regarding associated areas such as nutrition, sanitation, water supply and the like.

Karnataka Panchayat Raj Act, 1993

The mechanisms for the involvement of the rural community in development programmes, especially in the social sector including health, have been established by the enactment of the Karnataka Panchayat Raj Act, 1993. The Act specifies the responsibilities of these bodies regarding health services. It also prescribes the mechanisms, through Committees, for performance of these duties and for the involvement of the community.

However, it must be recognized that for participation of the community in the total sense, as envisaged in the Act and as recognized as essential, to be successful, certain pre-conditions would have to be satisfied. These include the:

- (i) availability of information to the community
- (ii) the development of the consciousness that health is a community concern
- (iii) a forum that provides for and permits intervention by the community and
- (iv) the acculturation and sensitization of the official agencies that provide health services. These are inter-linked. It also includes a clear definition of the roles of each of the partners in health – the community represented by the panchayat body and the official, professional agency. The perception of mutual roles of the panchayat body and the health officials must be clear.

The Act provides for community intervention and management of health services in the local area at the levels of the village through the **Gram Panchayat**, the taluka through the **Taluka Panchayat** and the district through the **Zilla Panchayat**. It casts responsibility on these institutions for planning and management of the health services through committees. In the Grama Panchayat, the Amenities Committee established under Sec 61 (1) (iii) is stipulated as responsible for education, health, public works and other functions. The inclusion of “public works” with the social sectors of education and health would clearly reduce the emphasis in the committee on the latter. The importance of the social sectors must be emphasized if they are to receive the attention they deserve. It would be desirable to amend Sec 61 of the Act to establish a committee uniquely for the social sectors of health, sanitation and education. It would also be desirable to specify that the membership of this committee would have to include a sufficient number of women members of the Grama Panchayat. It may be noted that there is an Education and Health Committee at the Zilla Panchayat level.

Orientation training of panchayat members

The development of the consciousness that health is a community concern is a process that is dependent on the responsibility that is assigned to the panchayat institutions to manage health services within their area. Devolution of management responsibility forces the pace of social change. However, if this process of change has to be smooth and rapid, it would be essential to orient the members of the panchayat at all levels with regard to their responsibilities, entitlements and duties to the community. Training programmes for this purpose, which include management procedures, must be organised on a continuing basis. Premier institutions such as the Institute for Social and Economic Change, the Community Health Centre and the like could be inducted for this purpose.

The health concerns of women and children are of special importance. Associated with these concerns are health concerns such as social issues as raising the age at marriage of girls, environmental sanitation, personal hygiene,

and improving literacy among girls. Since a large proportion of the panchayat members are women it would be desirable to orient them in these matters and involve them in the relevant programme and motivational activities. Training courses for empowering women members to play their role in programmes relating to RCH, ICDS, school health and similar programmes should be organised. They should be motivated to take up the role of community leaders in health and health-related issues.

Auxiliary Nurse Midwife

The ANM is a key functionary at the village level. Her ability to provide vital assistance during deliveries would be considerably enhanced if she is provided some minimum assistance. During deliveries, the ANM is often constrained to pay attention to the mother if there have been complications. The newborn infant, during this period, is without the essential attention needed, which could result in unfortunate results. Also, if multiple deliveries were to take place almost simultaneously, the ANM or the Dai would not be able to render the necessary assistance to the mothers. It would, therefore, be desirable to have a "second person" to assist the ANM or the Dai but more importantly to provide the necessary attention to the infant. The Gram Panchayat should appoint a woman of the village for this purpose as a health functionary. Such a functionary should be appointed for each of the villages falling within the jurisdiction of the Gram Panchayat. Such a person should be appointed specially where the Anganwadi worker is unable to assist the ANM. This person would also provide the Gram Panchayat assistance in management of field activities relating to health within each village.

The panchayat system, particularly at the Gram Panchayat level, needs fostering. The system would need assistance in preparation of plans and management of funds, training of its members, and special training for empowering the women members. Such assistance could be provided by the premier institutions referred to earlier through development of model plans, manuals and training programmes. In particular, model development plans for health could be formulated which would assist in preparation of the District Development Plan under Sections 309 and 310 of the Act.

Relationship with health hierarchies

One key issue is the relationship between the official health hierarchy and the panchayat bodies. This is more important at the taluka and district levels where the interaction between the hierarchy and the elected body is closer than at the Gram Panchayat level and quite often determines the degree of implementation and supervision of programmes.

The Act, in Sec. 196, requires that Government appoint or post officers to the Zilla Panchayat. Apart from such postings, Government have stipulated that district officers of departments, except some, shall be officers of the Zilla Panchayat on what could be considered as "deemed deputation". In the Health Department the staff upto the level of DHO is thus an officer of the Zilla Panchayat.

Views have been expressed that this arrangement reduces the capacity of the DHO to perform supervision and management duties efficiently; particularly a large part of one's time is devoted to attending meetings of the Zilla Panchayat. To delink the DHO from the Panchayat system would be against the spirit of the system and militate against the principle of decentralization. It is noted that Government have recently instructed that meetings must be specific in subjects and limited to four a month. Also, as provided in Sec. 155 (3) of the Act, the administrative powers of transfer of the staff of the Department, who are not officials appointed by the Zilla Panchayat, is within the power of the DHO.

Continuing responsibility of the Department of Health and Family Welfare Services

The impression of the health hierarchy that it has been divested of its responsibility with the establishment of these bodies is most misplaced. The Panchayat institutions operate under the authority delegated to them under the Act and perform their functions under the supervision and guidance of Government. These latter functions are performed through the Health Department so far as health services are concerned. The Department has, therefore, both a responsibility and duty to associate itself with the functioning of these bodies. The Director of Health Services has the right to exercise technical supervision and of inspections under Sec.233 of the Act. The initiative to guide these Panchayat bodies should come from the Head of Department. The functions and responsibilities of the Zilla Panchayat continue to be concurrently that of the Government through the Head of the Department. To ensure that health programmes are implemented effectively and that health services are efficient, the Commissioner could call for and review periodic reports on financial and operational issues and interact with the Zilla Panchayats.

The officers are part of these bodies but continue to exercise their administrative powers over their staff under their delegated authority. The delivery of health services by the staff would be dependent on the professional and administrative control that the controlling officer at the taluka or district level is able to exercise without interference. This recognition of the mutual roles of the officers and the panchayat members is important. Traditions, assisted with necessary orientation of both officials and elected members and instructions whenever necessary, must be built up for this purpose. The Government, in both the Health Department and the Rural and Panchayati Raj Department, would have to monitor this process.

It would be desirable to conduct orientation courses / workshops for the health hierarchy so that there is a better understanding of both their role and responsibility in the Panchayati Raj system. So far such orientations appear to have concentrated on the members of these bodies. Since the hierarchies of the Health Department, as is the case with almost all Development and Service Departments, have to work with and as part of the Panchayat institutions, such orientation courses would be useful. The Rural Development and Panchayat Raj Department could organize such courses.

People's Empowerment for Health

The management and monitoring of the basic health services that a community is entitled to by the community itself would go a long way to ensuring availability, accessibility and quality. It should be a tenet of policy to empower the people to do so or, in other words, to ensure that in **people's health is in people's hands**. The community should be capable of determining their basic health needs, evaluating the local health situation and the services that exist and improving upon them. Mechanisms to create such awareness and to enable the local community to prepare Village Health Action Plans would need to be developed. These would include health campaigns, imaginative adoption of participatory techniques such as PRA, PLA and micro-planning exercises. The involvement of youth and women's association, in conjunction with the panchayat institutions would be essential.

Village communities should be encouraged to form **Village Health Committees**. The Village Health Committee could include the Gram Panchayat Member, the ANM, Anganwadi Worker, School Teacher, leaders in the community, and representatives of self-help groups, the Mahila Swasthya Sanghas, village education committee, youth clubs and similar bodies. At least half of the membership should preferably be from the Scheduled Castes and Scheduled Tribes, with a strong proportion of women. Similar Committees could be formed at the levels of the Sub-Centres and Primary Health Centres. The Gram Panchayat is empowered to constitute such committees under Sec. 61 – A of the Act.

The Village Health Committees would have to be trained in conduct of meetings, prioritising issues and procedures so that they function effectively. This should be done through local orientation sessions that could be organized in phases by an institution such as the Institute for Social and Economic Change which has experience in the training of panchayat members.

These Committees would be responsible for assessing health conditions in their area, reviewing the health needs and determining requirements, and for preparing work plans on a periodic basis such as monthly or quarterly. The Committees would provide support to the health workers in carrying out their functions so that health services are available and accessible to the people. Such constructive interventions would render the service providers accountable to the people.

These Committees would also serve as change agents, if oriented and sensitized to social issues such as schooling of all children, especially of girls, raising the age at marriage of girls, need to maintain minimum standards of both public and private hygiene, and similar matters. In this context, the role of women's groups would be most important. A conscious movement would have to be initiated for this purpose.

The formulation of a pilot project for the formation of such Committees, developing necessary training material and sensitization could be assigned to the Institute for Social and Economic Change, Bangalore. The State Institute for Health and Family Welfare should also be involved in the process of sensitization of the official hierarchies.

Recommendations

- *The involvement of the Panchayat institutions and of the community in providing health services should be encouraged for improvement and enhancement of these services based on real needs;*
- *For enhancing such involvement, information should be available to the community and a forum must be developed. It would also be necessary to sensitize the officials in this regard;*
- *Sec. 61 of the Karnataka Panchayat Raj Act may be amended to establish a separate Committee for health, sanitation and education in the Gram Panchayat;*
- *Continuous training programmes for health need to be organized to orient members of the Panchayat bodies regarding their responsibilities, powers and duties and to impart management skills. Such training programmes could be organised by the premier Institutes in the State.*
- *Training courses in health for empowering women members of the Panchayats and women community leaders need to be organized. Such empowerment would improve the effectiveness of programmes such as RCH, children's and women's health in the community;*
- *A woman of the village should be appointed by the Gram Panchayat as a health functionary to assist the ANM.*
- *Model health plans need to be formulated for adoption by the Panchayat institutions. Such model plans would assist in developing the health component of the District Development Plan;*
- *The health hierarchy needs to be oriented regarding its role in the Panchayat system and its relationship with these bodies. In particular, there is a need to emphasize that monitoring of implementation of State funded activity, supervision and inspection continue to be a direct responsibility of the hierarchy;*

- A system of monitoring the health activities of the ZPs by the Commissioner needs to be established;
- The Rural Development and Panchayat Raj Department and the Health Department may develop a system of feedback from the health hierarchies in order to render the mutual inter-active role between the Health Department and the Panchayat bodies more productive;
- It would be necessary to conduct orientation courses / workshops for the health hierarchy so that there is a better understanding of both their role and responsibility in the Panchayat Raj system. The Rural Development and Panchayat Raj Department could organize such courses.
- The meetings of the ZPs may be regulated according to the circulars of the Department of Rural Development and Panchayat Raj regarding frequency, so as to permit district health personnel, particularly the DHO, to carry out inspections and supervision more intensively;
- Village communities should be encouraged to form Village Health Committees with wide membership, including representatives of women's groups, the youth, the ANMs, the Anganwadi Workers, and others. The Gram Panchayat is empowered to constitute such committees under Sec. 61 – A of the Act.

These Village Health Committees would have to be trained in the conduct of meetings, prioritizing local health issues, preparation of health plans, etc. Institutions such as the Institute for Social and Economic Change could be assigned this function;

- The formulation of a pilot project for the formation of such Committees, developing necessary training material and sensitization could be assigned to the Institute for Social and Economic Change, Bangalore. The State Institute for Health and Family Welfare should also be involved in the process of sensitization of the official hierarchies.

20. STRENGTHENING PARTNERSHIPS

20.1 PRIVATE / CORPORATE SECTOR AND VOLUNTARY ORGANISATIONS

The non-governmental organisations, which participate in health care, may be divided into two broad groups:

- **Voluntary Organisations:** These are **not-for-profit organisations**, committed to human development. Hospitals, health centres and dispensaries are established and managed by voluntary organisations, charitable and religious, and philanthropic persons. They are motivated by Gandhian, Sarvodaya or religious philosophies and thinking. Often, there are financial deficits, which are made good by donations from individuals or other organisations, national or international. If there is any surplus (rare), the surplus is ploughed back into the organisations or institutions, to improve the services.
- **Private-for-profit health care institutions:** These include nursing homes, corporate hospitals and clinics. They are established, owned and managed by single individuals or a group of individuals. Recently the number of corporate hospitals has shown a large increase.

20.1.1 Situation Analysis

1. Relative Size of Private Sector

- **Bed-availability:** The private sector is large in most states including Karnataka, except West Bengal. At primary health care level, the private sector is heavily used inspite of the vast network of Primary Health Centres (PHC's) run by the government. Even at the secondary and tertiary levels, private sector participation is increasingly felt. In Karnataka, the total bed strength of registered private and voluntary

Table 20.1 : Distribution of Private and Voluntary Hospitals by type of Ownership in Karnataka.

Ownership	Bed Strength					
	<10	10-29	30-49	50-99	100 and above	Total
Charitable Trust	8	20	18	13	9	68
Religious Mission	3	10	2	4	8	27
Registered Society	6	10	6	1	19	42
Limited Company	1	5	3	5	5	19
Partnership	17	67	34	7	3	128
Individual	575	717	90	31	12	1425
Total	610	829	153	61	56	1709

organisations was 40,900 in 1709 institutions in 1992, as compared to 31,840 beds in government hospitals. West Bengal is an example of a state where only 10% of total bed strength is in the private sector, of a total of only 6,912 beds. (Survey by Institute of Health Systems in 1992). The distribution of private and voluntary hospitals by the type of ownership and bed strength is shown in Table 20.1. It suggests more than 80% of the hospitals are owned by individuals / family and 3/4 have less than 30 beds. Very few hospitals have 100 beds. These are usually attached to private medical colleges and some voluntary organisations.

- **Health Care Provider:** The percentage of patients seeking outpatient treatment from various sectors in both urban and rural areas is indicated in Table 20.2 (42nd round of NSS No.364). Majority of outpatients (43.19%) get their treatment from private doctors, 22% of them from private hospitals in the urban areas with a similar trend seen in rural areas. There is almost equal distribution of in-patient treatment in public and private sectors in urban areas whereas in rural Karnataka 60% receive their in-patient treatment in public hospitals (Table 20.3). The dividing line between public and private providers is thin, as public providers do private practice, officially and unofficially.

Table 20.2 : Distribution of out-patient treatment over sources of treatment

Type of Hospital	Urban%	Rural%
Public Hospital	27	25.72
Primary Health Centre	1.71	8.47
Public Dispensary	1.23	1.27
Private hospital	22.07	18.48
Nursing Home	1.01	1.16
Charitable Hospital	0.24	0.17
(ESI) Doctor	1.36	0.94
Private Doctor	43.19	41.51
Others	2.19	2.28
Total	100.00	100.00

Table 20.3 : Distribution of in-patient treatment over sources of treatment

Type of Hospital	Urban%	Rural%
Public Hospital	48.51	55.31
Primary Health Centre	0.39	2.71
Private Hospital	40.49	32.94
Charitable Hospital run by Public Trust	1.26	2.59
Nursing Homes	9.06	5.62
Others	0.29	0.91
Total	100.00	100.00

- **Health Spending:** The total health spending in India accounted for about 6% of Gross Domestic Product in 1991, which is about Rs.320/- per capita at 1991 price levels. The private health spending, which mainly includes out of pocket household spending, accounts for 78% of total health spending. The share of the central, state and local government is about 22% only. Private spending accounts for 82% of primary care, 70% of secondary and tertiary care. Hardly 27% is spent on the preventive and promotive health activities. The above expenditure data on health clearly indicates the dominance of non-governmental spending in spite of government role in the health sector. However it is important to note that out of pocket spending on health is often made from borrowings. In the case of chronic and serious diseases this results in **indebtedness and impoverishment**. Medical expenditure is the second highest cause of rural indebtedness. Willingness to pay must thus be distinguished from ability to pay and from consequences of paying.

2. Registration

In spite of the dominance of the private sector the government has not clearly defined the role of this sector in the context of its overall health strategy. We do not have a system of registration of private medical establishments, including private clinics, and hence we have an incomplete picture of the private sector as a whole. In recent years, there is an ever increasing number of nursing homes and corporate hospitals especially in urban areas. In the absence of registration, monitoring and regulation of quality of care is not possible.

3. Accessibility

In both the private and public sector, access to health services is inadequate due to physical, economic and social issues. There are many areas especially in North Karnataka, where the infrastructure in terms of roads, transport and communication is poor and patients have to travel long distances to reach a government doctor. However, some of these areas are served by private doctors – including under qualified persons and quacks also practice in these areas. Non-availability of staff, especially doctors is one of the important reasons for seeking private medical aid. Further the health centres in these areas are not adequately supplied with drugs and basic equipments. Hence there is a special need to strengthen the government health care networks, and to encourage the development of non-governmental sectors to provide out-reach services which the government sector is unable to provide.

Various surveys, point out that health services are underutilised by the depressed classes, women in general and tribals due to misplaced beliefs, hesitancy and economic reasons. In Karnataka, the sex ratio amongst hospitalised patients is 786 female patients for 1,000 males, whereas the ratio in population is 964 females to 1,000 males. (Census, 2001) There is need for special efforts to change the “health seeking” behaviour of special groups even in the private sector.

Even the economically weaker sections seek medical aid from the private sector in spite of financial limitations in view of the ‘faith’ in the private sector. The expenditure incurred is on doctor’s fees, drugs, investigations and transport. Naturally, the poor postpone treatment until the problem becomes acute and serious. The charges are subsidised in hospitals run by charitable and religious institutions and some hospitals run by private medical colleges. In order to address this high level of out of pocket spending, the government encouraged pre-paid risk pooling mechanisms in the long run, such as insurance schemes like the ESI and CGHS schemes. But these schemes do not cover non-governmental and unorganised sectors. Private voluntary insurance, covers barely 3.3% of the population. Community financing schemes and social insurance schemes may be encouraged.

4. National Programmes and IEC Activities

The private sector is mainly confined to individual curative aspects and they play an insignificant role in preventive and promotive health care. They are not involved in information, education and communication activities (IEC). The national vertical programmes like malaria, filaria and tuberculosis control programmes have become only governmental programmes. A small survey conducted suggested, none of the government functionaries approached the private sector for involvement in IEC programmes or regarding training programmes (survey commissioned by Task Force). Hence there is a need to involve the private sector in all preventive, promotive health care programmes either individually or through professional bodies like IMA and various specialist organisations.

5. Contracting-Out

The private contracting of health services, involves employment of some specialists and clinical and non-clinical support services. There are a number of specialists in the private sector especially in district and taluka levels, whereas the governmental hospitals may be deficient in them. Further the clinical support services like diagnostic laboratories, X-ray and scanners may be available either in private or public sectors. There is a need for utilisation of these services either by government hospitals or by private institutions on agreed conditions for the benefit of the community as a whole. The terms of agreement needs to be carefully spelt out.

The private contractual services especially in non-clinical services are reportedly more efficient and cost effective than direct labour. The contracting out of non-clinical services like cleaning, catering, laundry, maintenance and security is justified in terms of lower costs, easier implementation, greater flexibility and efficiency (Anne Mills: contractual relationship between government and commercial private sector in developing countries. Are they a good idea in Health 1995). The government should also take into account the quality of services as well as the administrative capacity to supervise such contracts. However payment of minimum wages and social security benefits like leave and medical benefits should be ensured. The experience of KHSDP concerning contracting out should be studied.

6. Tertiary Care Hospitals in Private Sectors

There are increasing numbers of tertiary care hospitals being established especially in cities, with some being attached to private medical colleges. It is prudent, to utilise these hospitals as referral centres and for training purposes.

7. Quality of services, monitoring and cost of treatment:

- Although, private health services are easily accessible, the quality of medical services is variable. The quality of service provided depends on the staffing, equipment and availability of drugs.
- A study commissioned by Task Force reviewed the level of care and quality in private sector through "exit patient perception" of quality. The quality of care is perceived to be high when the expectations of patient with respect to outcome of service are met. Almost all the patients felt that their expectations were fully or partially met (Table 20.4).
- Data on the total number of "medical practitioners" is not available in India. Government figures indicate the national average of one private practicing physician for every 3,500 people. The official figures provide information only on the registered medical practitioners and there are any numbers of unqualified "doctors".

Table 20.4 : Patient Expectation Response

Expectation	In-Patients	Out-Patients
Fully met	54%	48%
To some extent met	46%	48%
Not met	0%	3%

Hence there is a need to strengthen the registration of all doctors or medical practitioners by different medical councils (Allopathy or alternative medicine).

- At present there is no registration of private clinics, nursing homes or any other private medical establishments. There is a need for minimum standards to be observed by practicing doctors and in physical structure, equipment and personnel of medical establishments. The minimum standards may depend on the location of the establishment (cities, semi-urban or rural areas) and the type of institution. Hence there is a need for detailed consultation with the various professional bodies, regarding minimum standards.
- The Consumer Protection Act (CPA) 1986 is one of the most revolutionary legislations, to protect the consumer and monitor the quality of service. In November 1995, the Supreme Court passed a landmark judgment making it finally clear that the service rendered by a doctor will come under the definition of service in C.P. Act. This has raised concerns in the medical community with regard to sanctity of doctor-patient relationship, the spread of defensive medicine increasing the cost of health care and the appropriateness of determining “right or wrong” of medical decisions by consumer courts. The above issues highlight the fact that there is no standardised medical audit system, which can provide the patients and legal community with information regarding “acceptable procedures” for diagnosis and treatment.
- One other aspect that concerns the patient is the cost of treatment in the private sector. It is difficult to prescribe a particular fee for a procedure and consultation etc., due to several variables like, the experience of doctor, type of hospital and the situation of the hospital etc. However, it is necessary to have transparency in charging by providing a brochure containing charges and explaining to the patient the cost of management of a particular disease or condition.
- The Government of Karnataka has placed before the Legislative Council “The Karnataka Private Medical Establishments (regulation) Bill 1998 for regulation and control of private medical establishments. However there is a need for several changes and modifications of the Bill and consultation with appropriate associations and professional bodies is desirable.
- In addition, there is a need for Quality Assurance (QA) that focuses on continuous improvement in service delivery and on consumer satisfaction. Self-assessment programmes and self-regulatory mechanisms may be established by the IMA, Nursing Home Association or any other appropriate body. The Q.A. programme will offer a standard in medical management against which medical auditing and reviewing can be carried out.

Financing of Health care

The income group profile of patients seeking various types of hospitals is shown in the Table 20.5. (Study Commissioned by Task Force). It suggests that the high income and upper middle income groups are served by Corporate hospitals, lower and middle income groups by teaching, trust and to a certain extent missionary hospitals. The nursing homes cater to middle and upper middle-income groups. The household "out of pocket" spending is significant and this forms a considerable burden on middle and low-income group. Hence there is a need for Health insurance especially for middle and low-income groups.

Table 20.5 : Income group profile of patients across hospitals

Income Groups	Percentage of Total Patients Visited										
	Corporate		Trust		Teaching		Missionary		N.H.	Govt.	
	A	B	A	B	A	B	A	B	Avg.	A	B
	Urban	Urban	Urban	Urban	Urban	Rural	Urban	Rural		Urban	Rural
High Income Group (>Rs.10000p.m.)	40	25	10	20	--	5	N.A	10	12.5	5	5
Upper Middle Income Group (5000-10000p.m.)	50	35	20	30	--	5	N.A	15	50	10	10
Middle Income Group (3000-5000p.m.)	10	25	50	30	20	5	N.A	15	25	30	15
Lower Middle Income Group (Rs.600-3000p.m.)	--	10	20	10	70	80	N.A	30	7.5	25	20
Low Income Group (<600p.m.)	--	5	--	10	10	5	N.A	30	5	30	50
Total	100	100	100	100	100	100	N.A	100	100	100	100

India has two main mandated contributory health income schemes – Employees State Insurance Scheme (ESIS) and Central Government Health Scheme (CGHS). Other insurance policies are from the Government owned General Insurance Company (GIC) and its subsidiaries.

A sample survey was conducted to determine the extent of premium payable by the cross-section of the society (study commissioned by Task Force). The premium affordable ranged from Rs.300 per annum (Lower income group) to Rs.500 (middle income group). A low premium scheme, JANA AROGYA BIMA was introduced by GIC in 1996 that requires a premium of Rs.70-140 p.a. for the maximum benefit of Rs. 5000/-. A modified scheme with higher premium may be considered.

20.1.2 Collaboration may be achieved by the following measures to be introduced at various levels:

Primary Care level:

- The government must encourage private practitioners to establish clinic and hospitals by providing infrastructure and soft loan facilities as are done in case of small-scale industries. These facilities may be extended to doctors from alternative medicine as well.
- The majority of patients still consult the private practitioners, including economically weaker sections. The basic drugs and vaccines may be provided to the registered, willing practitioners for dispensing to the poorer section of society, recognised on the basis of green/yellow cards. Proper record keeping is to be

insisted upon. The drugs used in the national programmes may also be given to these practitioners so that they also actively participate in the national programmes as per the norms of the programme.

- There may be PHC's where the doctors are not available and a willing private practitioner may be recruited on "ad hoc" basis. The private practitioner may be given access to the facilities of PHC's including admission and laboratory facilities with the concurrence of PHC medical officer. Such patients may be charged according to government tariff. Even the industrial houses may be invited to adopt local PHC's.
- The private practitioner should be encouraged to participate in preventive and promotive health programmes. The government should actively seek the co-operation of the private practitioner in disseminating public health messages, by involving them in information, education and communication activities (IEC).

Secondary level:

- At secondary level hospitals, there may be a deficiency of specialists, but who may be available in the private sector. The services of these specialists may be obtained to serve the government hospitals on an agreed honorarium. The specialists may be selected by the board of visitors attached to the hospital.

The x-ray, blood bank and laboratory facilities of government hospitals should be allowed to be used by private practitioners on payment, especially where such services are not available. There could be misuse of these facilities by the private practitioners as well as government doctors that could be minimised by proper supervision by the chief medical officer. In spite of the possible misuse, the benefits of the arrangement are much more for the suffering patient. The government will also be benefited financially. The money may be utilised for the improvement of the hospital.

- At secondary level the services of IMA may be obtained for active involvement in national programmes and IEC activities. "Pulse Polio", Leprosy and oral rehydration programmes are some of the successful examples of private-public co-operation. The services of experienced private doctors may be utilised for training of junior doctors and other para-medical staff.

Tertiary Care:

Tertiary care and super-speciality hospitals may be left to be developed largely by the private sector.

- Private tertiary care hospitals may be asked to offer concessional services, as a matter of social responsibility. A separate fund may be created in the government with public and government contribution, to be utilised for deserving patients on the recommendation of respective hospitals. Independent machinery may be created for the disbursement of the money.
 - The private hospitals are encouraged to conduct teaching and training programmes for doctors and para-medical staff, drawn from both governmental and private sectors.
 - The private medical colleges are asked to manage the PHC's of the block. This is useful for their teaching programme also. There should be greater involvement of the staff and students of medical colleges in preventive, promotive and health educational activities.

Contracting out

The State Government, wherever economically attractive, may contract out support services such as sanitation, dietary, security and laundry etc.

Monitoring

- Registration of all doctors is essential whichever system of medicine they practice. By doing so quackery may be minimised.
- All private medical establishments including private clinics have to be registered:
 - A committee may be formed and empowered to lay down minimum criteria/standards for registration.
 - The committee may consist of representatives of IMA, KMC and representatives of Nursing Home and private practitioners associations, apart from government representatives. There must be substantial number of non-governmental representatives.
 - This committee is empowered to register and monitor private medical establishments. Due consideration has to be given while registering regarding the location of medical establishments (urban or rural).
 - There should be transparency in charges for various medical treatment.
 - The Karnataka Private Medical Establishment Bill 1998 which is placed before the Legislative Council, has to be discussed with concerned parties and modified to have the desired effect. Appropriate recommendations are made by the Task Force in the Karnataka Private Health Care Establishments Bill.
- The government may ask professional bodies to prepare a standardised medical audit system that should indicate the acceptable procedures for diagnosis and treatment. Quality Assurance is a continuous process and professional bodies may be encouraged to have a self-assessment / self-regulatory mechanisms.

Financing the Health Care

Government must encourage family insurance scheme from LIC or private insurance agency. "Jana Arogya Yojana" is one such scheme put forward by Oriental Insurance Scheme. A modified scheme with higher premiums and benefits must be considered.

20.2 GENERAL PRACTITIONERS

Situation

General Practitioner (Family Physician) is a primary care doctor in the community. Most of these General Practitioners are in the private sector; some of them may be employed in certain non-governmental health organizations. The General Duty Medical Officers in government service are the counterpart of the General Practitioners in the private sector. In Karnataka 60% of the primary medical care is provided by the private medical practitioners; hence we have a large number of medical men and women catering to the medical needs of our people. Most of the work done by the General Practitioners is curative. The General Practitioner is usually approachable, knows the family and lives in the community.

We need to focus our attention as to how the services of the General Practitioners can be utilized to the health care needs of our population particularly in rural areas. Today the basic doctors (MBBS) who are churned out of the portals of the medical colleges are under-trained for the job they are expected to do. Today's graduates do not get good training in Family Physician work. Therefore it boils down to the fundamental aspect of training

our graduates in family medicine soon after they acquire basic MBBS degree. The general practitioner (family physician) must have career prospects. This could be by starting a Postgraduate diploma and degree in Family Medicine in our State Health University and also recognizing senior well trained Family Physicians in private sector to train the young doctors such that they can take up the National Board of Examination in Family Medicine. Family Medicine must be treated as yet another evolving speciality by itself.

The services of the private medical practitioners in every locality must be enlisted by the Taluk Medical Officers and PHC, MOs in all the National Health Programmes. Such of those General Practitioners who participate in the preventive and promotional work must be given encouragement by training them and deputing them for training programmes in National Health Programmes just like government General Duty Medical Officers.

The services of General Practitioners can be availed of when the posts of medical officers remain vacant for a length of time, due to any cause. The incentives must be further extended for those General Practitioners who settle down in rural areas by offering a very low rate of bank interest to establish their clinics in the areas underserved by the Medical facilities. Wherever acceptable NGO's are functioning with reputed General Practitioners, PHC's can be handed over to the NGO on trial basis to run the centre, providing comprehensive primary health care.

There has to be a good rapport between private sector General Practitioners and Governmental agencies to provide **Health For All**.

20.3 VOLUNTARY HEALTH SERVICES

Introduction

Voluntarism in health care has been an old tradition in Karnataka, with many institutions in the voluntary sector being over a century old. Many of these institutions have become major hospitals.

The role of the voluntary organisations may be classified as follows:

1. Directly providing health care services.
 - Rural health care providing primary health care services to rural/tribal and other remote areas where governmental agencies may not exist.
 - Hospitals, mainly situated in the urban areas represented by charitable and religious organisations.
 - Basic curative and health education services to the urban poor.
 - Urban based hospitals with rural outreach services, providing curative / preventive services.
 - Voluntary organisation providing exclusively family welfare services through urban health and family welfare centres.
2. Resource Groups: Providing training and information to personnel of voluntary organisations.
3. Networking and facilitating voluntary organisations providing expert advice and consultancy services.
4. The voluntary organisations innovate new strategies in health care e.g. integration of traditional systems in primary health care.
5. Research and issue raising groups.

The voluntary organisations work at different levels:

- working at grass root levels, concentrating on education, health, environment and women's issues etc,
- involved in training at various levels, networking and supporting other organisations,
- focusing on advocacy, lobbying, communication and policy research, or
- only concentrating on special issues like AIDS, leprosy and tuberculosis.

Situation analysis

The voluntary organisations focus on a range of issues like tribal health, health of the disadvantaged sections of the society (women, persons with disability). They are able to reach the poor, and the needy because of their motivation and empathy. They have more freedom to act and implement and less hierarchy so that the implementation of programme is quicker.

We do not have the exact number of voluntary agencies in the state or their scope of activities. There are some associations which joined hands to establish co-ordination of activities and help in the interaction with the government. These are the Voluntary Health Association of Karnataka (VHAK), Catholic Health Association of India – Karnataka region (CHAI – Ka), Christian Medical Association of India (CMAI), and Federation of Voluntary Organisation for Rural Development in Karnataka (FEVORD-K).

The percentage of voluntary organisations situated in cities and rural areas is reportedly 70% and 30% respectively. There are fewer agencies working in the Northern Karnataka and drought prone areas.

Strengths of Voluntary Organisations in Health Care

Voluntary organisations and institutions are usually small and autonomous. There is flexibility in approach and activities. They are in favour of the weaker sections and respond to their needs and priorities.

Weaknesses

There is often lack of funds. There is also the likelihood of lack of professionalism. Not enough attention is paid to financial management and accounts. This can affect sustainability.

Government and Non-Government Organisations

Why does Government want NGOs? Non-governmental organisations can augment resources (human, material and financial) for health care. NGOs (and especially not-for-profit organisations) have close rapport and relationship with the people. NGOs are flexible, less formal and more effective in providing health care services. They can usually execute programs at less cost (greater efficiency).

Relationship between Government and NGOs

This can take many forms

- **Dependency:** This may be of resources or of ideas. The NGOs accept the role of Government in defining health services, and implement programmes prepared and financed (largely) by Government. NGOs are accepted, recognised and legitimised.
- **Subcontracting:** NGOs become implementers of Government programmes. They fulfill targets prescribed by government.
- **Collaboration:** There is mutual respect, autonomy and independence. It creates partnerships, valuing the different opinions. There can be a 'sweet and sour' relationship.

- **Adversary position:** The NGOs may challenge government policies and styles of functioning. They may support social (including health) movements, which may be contrary to Government's strategies.

Promoting Healthy Relationships

It is necessary to have a healthy, collaborative relationship. This can be achieved by:

- Policy support, through appropriate legislation and procedures, which affect NGOs;
- Creating a climate conducive for collaboration through dialogue and mutual support;
- Providing access to information;
- Formulation of plans after discussion;
- Having partnership in action;
- Eliminating areas of conflict;
- Sharing expertise and know how;
- Convergence of services with people as focus.

How to choose voluntary organisations?

Government at times faces problems in having to choose NGOs for collaborative efforts or when NGOs apply for support in carrying out health and development programmes. NGOs must help in identifying the NGOs who can be accepted by the Government. It may be worthwhile to have a small committee or a forum of few known NGOs in the State who can help the Government in this matter.

The Committee / Forum must develop the criteria for selection of NGOs:

- Does the NGO have credibility? Does it maintain records? Does it have transparency? Is it accountable to the people?
- Does the NGO have an empowerment approach? Does it help people to help themselves?
- Does the NGO have appropriate persons?
 - Professional and technical
 - Management
 - Supportive staff
- How efficient and effective has it been in
 - Solving problems
 - Making use of opportunities?

Collaboration between the Government and non-governmental organizations can have a salutary effect in improving efficiency and effectiveness of health care services. Government has to continue as a main functionary, but the voluntary organisations can give a qualitative boost to the efforts of the Government and the people.

There are some inherent weaknesses in voluntary organisations. They are individualistic and there is a lack of second line leadership. The organisations that depend on external agencies for funding might have to limit their activities depending on the funds.

Financial administration and accounting is poor in voluntary agencies and hence there is some hesitancy for financing by external agencies.

There is a considerable amount of duplication of programmes between the Government and voluntary agencies. The duplication may be avoided by maintaining a proper registry of voluntary agencies and their field of interest and activities.

Voluntary organisations and the government

There is a growing realisation for the need to develop a healthy partnership between the government and voluntary organisations. There is a need for better understanding, identification of roles, complementary action, mutual learning and cooperation. There is a Standing Committee Of Voluntary Agencies (SCOVA) to collaborate and formalise the relationship.

The government is the main functionary and all voluntary agencies play a supportive role in all aspects of social welfare rural development besides health care.

Recommendations

The over all strategy of the government should be to recognise and appreciate the importance of the voluntary and private sector, to create an atmosphere of trust, and to foster public-private partnership in delivering comprehensive health care. There is need to develop a policy for the entire health sector inclusive of public, private, voluntary groups and people traditions. It may be initiated in the following ways:

- *Enhance the scope/importance of collaboration with the private and voluntary sectors in primary, secondary and tertiary level of health care.*
- *Involve the private and voluntary sector in preventive and promotive care in addition to curative care.*
- *Promote partnership between public, private and voluntary organisations.*
- *Evaluate and monitor quality of services in the private and voluntary sectors. Set standards and accreditation sectors.*
- *NGO cell should be created directly under the Commissioner/DGHS and representatives of voluntary organisations working for the health sector should be members of it. The cell should register all organisations and bring out an annual report of the activities of voluntary organisations. The grant-in-aid procedures must be simplified and the bottlenecks removed, to help better collaboration and remove the feeling of frustration.*
- *The logistics of partnership between the government and voluntary organisations have to be worked out by the NGO cell. Voluntary agencies should be invited to participate in the planning and monitoring of health policies and strategies by the Government.*
- *The agencies, have to be used more and more for the effective implementation of national programmes, spread of health education and to act as a watch-dog over the provision of health services within the public/private sectors.*

21. MULTISECTORALITY AND INTER SECTORAL CO-ORDINATION

ALL FOR HEALTH

1. Health Sector cannot achieve **health for all** on its own. Most of the determinants of health are outside the narrowly defined “health” sector. It is well known that education can play a significant role in the development of better health. The higher the level of education the better the health status. This is especially so with respect to female education. We can have health promoting schools. In all the developmental activities, health sector can (and should) provide technical expertise. Health sector can provide “added value”. We should have partnership approach between the health sector and other sectors. Integrated approaches are needed. In the health sector itself, there is need for better partnership between the public, voluntary and private sectors, so as to provide better care, especially for the disadvantaged and improvement public health.

“Health profession has a key role to help ensure that the policies and strategies of various sectors and organisations contribute positively to health protection and promotion”.

- Intersectoral Action for Health, WHO, Geneva, 1997

Intersectoral Action for Health calls for positive mutually supporting **relationship** between health sector and other sectors to achieve health outcomes, which are more *efficient, effective, equitable and sustainable* that could be achieved by the health sector alone. Whether within the Government or outside it, decisions affecting health should be taken collaboratively.

- The action taken should involve consideration of links between health and various factors in the physical, social and economic environment.
- The action must modify activities among the determinants of health so as to achieve better health.
- The action should carry out the activities through widespread community participation.

2. Determinants of Health

The determinants of health are varied. They may be

- Biological; genetic;
- Environmental;
- Social and cultural
- Demographic
- Economic
- Food and nutrition
- Health Care Services
- Violence and conflicts

3. Communication:

Each sector in the development field has its own kind of functions, its own culture, its own priorities. But parts of these functions are allied to health. The web that holds intersectoral actions together is intersectoral communication. There is a need for exchange of information.

4. Current health challenges:

- Environment related health problems
 - Poor housing and living conditions; slums.
 - New and re-emerging infectious diseases.
 - Microbiological contaminants; chemical contaminants
 - Social health issues.
 - Accidents
 - Violence
 - Public health hazards
 - Unsafe drinking water
 - Unsafe food
 - Poor sanitation
 - Unhealthy lifestyle
5. A few of the more important areas for intersectoral action for health can be considered.

5.1 Agriculture and health

Food: India blessed with good monsoons in the past many years, has adequate production of food. Yet there are many people without adequate food intake. Food and nutrition security targeted to the poor and free nutritious midday school meals are often necessary.

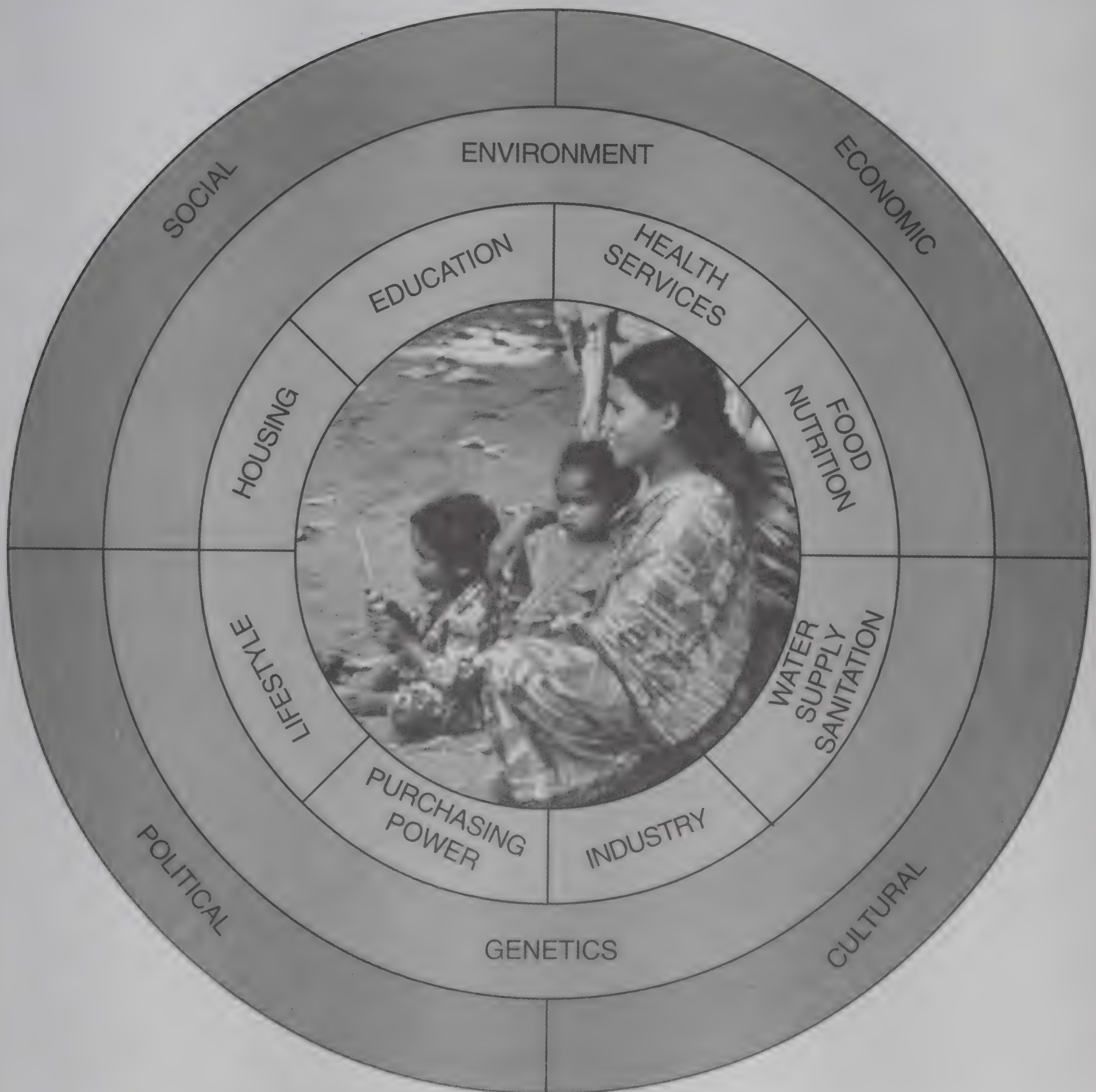
Horticulture: Improvement in the nutrition of the people can result from better management of the food that is grown. Health centres and schools can have kitchen gardens, as demonstration plots, which can then be replicated in the houses and dwelling places, particularly in the rural areas.

Food Safety: It is important to assure food safety. Monitoring must be done at every stage of food production, processing and use. Food is being marketed on the streets, often open to dust, flies and other insects, which can lead to infection.

Nutrition: Security is a must for good health. Karnataka has a large number of malnourished persons throughout the age cycles (See chapter on nutrition).

Land reforms can affect food production. Kerala has done well as regards almost all health services. One of the major reasons leading to better health is the land reform, which has enabled large number of tenants to become landowners. They cultivate their own land with improved production of cereals, fruits and vegetables for their consumption. It also gives them more "living" space.

DETERMINANTS OF HEALTH





Irrigation schemes while essential for improved productivity of food, can affect the health of the people adversely in many ways. It can spread parasitic and diarrhoeal diseases. It can also spread vector borne diseases, such as malaria. Sometimes sewage water is used for irrigating vegetables. It is essential to have health professionals involved in the design and use of water, as also disposal of wastewater.

Substitution of crops and diversification can help to improve nutrition and purchasing power. We are short of pulses, which are needed for balanced nutrition.

5.2 Education and health

The partnership role between education and health is well known. Education plays a key role in improving all health indices, whether it is in reducing infant mortality rate, maternal mortality rate or improving healthy life expectancy.

Greater education often translates into improved health status. Investment in the education of girl can yield high pay offs in terms of health and development. It often delays child bearing; it can lead to better pregnancy outcomes. The children are also healthier.

School health programmes include health promotion, periodical health check ups and health services. The school environment can be improved. Better use of toilets can improve sanitation and health. This becomes a lesson for the children and through them, their parents and siblings. Education can be the vehicle for prevention of diseases.

5.3 Industry and health

The Environment (Protection) Act, 1986, lays down the standards of quality of environment and of pollutants from various sources. It also restricts areas in which any class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards, laying down procedures for handling of hazardous substances. Unfortunately, not enough action is taken to prevent pollution. The recent decision of the Supreme Court asking that the large number of polluting industries be removed from Delhi is an exception. This example should be followed by the state, to ensure a livable environment. At the same time, it is necessary to ensure that the workers who lose the jobs get alternate work.

Workplace: Stressful living and working conditions characterize many industries leading to increased morbidity and mortality.

Safety (occupational) : Dangerous and dirty work take toll of the health of the workers. Measures must be in place to ensure the safety of workers. Procedures that are toxic or unsafe must be banned.

5.4 Housing and Health

Good shelter is necessary for good health. It provides for health promotion and protection. Unsafe and over crowded housing, near waste dumps or in flood zones must be avoided. But the poor have little choice; the alternative is often absence of shelter. The Housing Boards and Urban development authorities can play a key role.

5.5 Animal Husbandry and Health

Animal Husbandry can play a major role in determining good health. While it can give nutritious food, safety must be ensured. The Department of Animal Husbandry can help in ensuring safe nutrition.

5.6 Environment and Health

The World Commission on Environment and Development (1987), headed by the present Director – General of WHO, Mrs. Gro Harlem Brundtland, produced the report “Our Common Future”, linking economy and environment. The United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 (Earth Summit) had “Agenda 21” which had key health related objectives.

- Meeting primary health care needs,
- Controlling communicable diseases
- Protecting vulnerable groups
- Reducing environmental health hazards.

Health sector seems to have abdicated much of its responsibility with regards the environment affecting health.

5.7 Water Supply and Health

Water in adequate quantity and quality, is essential for good health

Safe Drinking Water: Often the water is contaminated. It is a common finding to have outbreaks of gastro-enteritis and diarrhoeas, as summer approaches. This is seen in rural and urban areas. Corroded water pipes lead to contaminated water being supplied in the city supplies. The Bangalore Water Supply and Sewerage Board and the Karnataka Urban Water Supply and Drainage Board can help to prevent outbreaks of diseases, by ensuring safe drinking water in cities and towns. The panchayats must ensure the same in the rural areas. The Health department can monitor the quality of water and alert the water supply system to take prompt action.

Water borne diseases: There are many water-borne diseases still prevalent in the State, even though we have the technical know-how to prevent such diseases.

Water related diseases: Vector (mosquito, flies) borne diseases are still very common; community participation is essential to reduce, if not eliminate these diseases.

5.8 Sanitation and Health

Good sanitary arrangements can reduce the prevalence of diarrhoeas and worm infestations, such as round worms and hook worms that lead to anaemia and under nutrition. There is need for sanitary latrines. Proper use of latrines, including washing of hands after defecation, has been shown to be an important factor in removing fecal-oral infectious diseases.

Waste disposal is essential, whether it be solid or liquid waste. Hospital waste is a special category, where there is added problem of microbiological and other contaminants.

5.9 Social Welfare and Health

There has to be co-ordination between Social Welfare and Health. This is particularly so with respect to disadvantaged sections of the people. Persons with disabilities, women and children and elderly need such co-operation.

5.10 Tobacco Control

Intersectoral action is needed on almost all issues in health. One of the emerging issues in health is the control of tobacco use. Control requires legislation (political will; legislature), taxation (tax reforms), prevention of smoking and abuse of tobacco in other forms (education), agriculture (reduction in growing tobacco and alternate use of land), labour (women and child workers) and media (advertisement).

5.11 Poverty and health

Poverty has been defined by UNDP as “the denial of opportunities and choices basic to human development”. Poverty has economic, social and political dimensions. It produces helplessness, insecurity and powerlessness. Poverty breeds ill health and ill health leads to poverty. Any attempt at alleviation or eradication of poverty will have its impact on health. So also, improving the health of the people is one sure way of reducing poverty.

5.12 Development and Health

Many developmental activities directly or indirectly affect health. An example would be digging canals to provide for irrigation. The water may partly be used for drinking purposes and thus improve health. But it may also breed vectors (like mosquitoes) and lead to vector – borne diseases (like malaria). Health Sector must develop the capacity to undertake studies and collect data to measure and estimate the possible health impacts of developmental activities. The death and disease burden of development activities should be measured with an estimation of the contribution that the social and environmental factors are making to the health problems, as also the health opportunities presented by developmental programmes.

*“ Human beings are at the centre of concerns for sustainable development.
They are entitled to a healthy and productive life in harmony with nature”*

- U. N. Agenda 21. Programme of Action for Sustainable Development,
Rio declaration on Environment and Development, Rio de Janeiro Brazil, 1992.

6. Critical pre-requisites for intersectoral action for health

Few or no mechanisms are available to enable health professionals and health policy makers to have any significant role in the process of developmental policy making, which needs intersectoral collaboration. Among the critical pre-requisites are:

- conviction among health professional that a key strategy for improving health is to work together with other sectors;
- governments, State and local, should make health central to the development policies;
- a general recognition by all that better health is an integral part of community development; and
- developing the technical capacity to advise other sectors about modifications to their activities that would improve health of the people and actively listening to suggestions of other sectors and acting upon them.

Recommendations

- *The State must establish administrative machinery and Co-ordination committees at the State, district and local levels for intersectoral action for health. These groups must be involved in the preparation of the State plan.*
- *Have a High Power Core Committee (intersectoral) headed by the Chief Secretary at the state level and committees at the district level with participation by D.Cs and C.E.Os. The Committees should have representations from Health, Education Women and Social Welfare, Agriculture, Horticulture, Animal Husbandry. Irrigation, Housing, Industry, Pollution Board and Environment. Subcommittees can be formed to reflect and take action on specific matters.*
- *All developmental programmes must have inputs from the health sector to make use of the opportunity to improve health and prevent problems.*
- *Health personnel (Public Health) should be trained to anticipate and find solutions to possible health hazards of developmental programmes. They should continue their association during implementation, monitoring and evaluation of the programme.*

22. THE KARNATAKA STATE INTEGRATED HEALTH POLICY 2001 (Draft)

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1. Introduction

1.1 Health gains

During the past century and particularly after Independence in 1947, several gains have been made in health and health care in Karnataka. Life expectancy at birth (LEB) has increased from 26 years in 1947 to 66.3 years for women and 65.1 years for men in 1998. The Infant Mortality Rate (IMR) declined from 120 in 1951-60, to 81 in 1981, and further to 58/1000 live births in the late 1990s (SRS, 1998). Smallpox has been eradicated. The state has become free of plague and more recently of guinea worm infection. The incidence of polio has been reduced to just 6 cases in 2000. A widespread infrastructure of health and medical institutions has been developed through government policy measures. A large pool of trained health personnel has also been created through support to training institutions in the public and private sector.

1.2 Health gaps

However, gaps remain. Large rural-urban differences remain, exemplified by IMR estimates of 70 for rural areas and 25 for urban areas (SRS, 1998). Despite overall improvements in health indicators, inter district and regional disparities continue. The five districts of Gulbarga Division (Bidar, Koppal, Gulbarga, Raichur, Bellary) and Bijapur & Bagalkot districts of Belgaum division continue to lag behind. Under nutrition in under five children and anaemia in women continue to remain unacceptably high. Women's health, mental health and disability care are still relatively neglected. Certain preventable health problems remain more prevalent in geographical regions or among particular population groups. Decision making and financial powers are insufficiently decentralized or exercised, to develop swift and effective local responses to health problems.

The public lack confidence in public sector health services, particularly at primary health centres. Lack of credibility of services, adversely affects the functioning of all programmes. Underlying reasons for implementation gaps need to be understood and addressed.

1.3 Health policy approach

The State has so far followed policy guidelines through the framework of successive Five Year Plans developed by the Planning Commission, decisions of the Central Council of Health and Family Welfare, central health legislation and national health programmes developed by the Central Government. Over time, separate policies at national level have developed for health (1983), education for health sciences (1989), nutrition (1993), drug policy (1988 and 1994), Medical Council of India (MCI) guidelines (1997), blood banking (1997), the elderly (1998), and population (2000). All these have served the State well in developing its health system, and will continue to be used as a standard for further growth.

Health however is constitutionally a state subject. Health needs, defined socio-epidemiologically, vary between states and even districts, requiring more specific planning. Health expenditure is met largely by the State budget, with 82% of public sector expenditure on health from the State Government of Karnataka and 18% from Central Government. A comprehensive Karnataka state policy for the integrated development and functioning of the health sector is therefore being articulated explicitly, for the first time in 2000-2001, at the turn of the millennium. The policy with a strong emphasis on process and implementation will be an instrument for optimal, people oriented, development of health services.

- It will build on the existing institutional capacities of the public, voluntary and private health sectors.
- It will pay particular attention to filling up gaps and will move towards greater equity in health and health care, within a reasonable time frame.
- It will use a public health approach focussing on determinants of health such as food and nutrition, safe water, sanitation, housing and education.
- It will expand beyond an excessive focus on curative care and further strengthen the primary health care strategy.
- It will encourage the development of Indian and other systems of medicines and healing.
- It views health as the right of every citizen and will work within a framework of social justice and decentralization as envisaged in the 73rd and 74th Constitutional Amendments.
- Most importantly it is intended to be a guiding document that needs to evolve and be changed in response to changing situations.

This policy evolution derives from intense, interactive discussions organized at all levels through the Karnataka Task Force for Health, throughout 2000 and early 2001.

2. The Karnataka vision statement for better health and health care

- 2.1. Karnataka State recognizes the immeasurable value of enhancing the health and well being of its people. The State's developmental efforts in the social, economic, cultural and political spheres have, as their overarching goals, improved well being and standards of living, better health, reduced suffering and ill health, and increased productivity of its citizens. It is recognized that health and education are central to development. Health is a basic human right, an entitlement, and an individual and collective responsibility. The constitutional mandate, role and responsibility of the state (government) in giving direction, in creating a policy framework, in health care provision and related endeavours including maintenance of standards of health care, is of critical importance in meeting these social development objectives.

The understanding of health was articulated by the World Health Organisation (WHO), 1948 as "*a state of complete physical, mental and social* well-being and not merely the absence of disease or infirmity*" creating the ability to lead a "*socially and economically productive life*" (WHO 1978). This is the ideal towards which individuals and institutions in society strive. While India and Karnataka accepted the goal of the World Health Assembly of 1978, of Health for All by 2000, it is acknowledged that this has not been achieved. The State will work with a sense of greater urgency and commitment to a renewed goal of Better Health for All, Now, particularly for the underprivileged.

Karnataka reaffirms the relevance of the strategy of Primary Health Care, and the importance of practising the principles of Public Health in order to reach this goal.

The state is supported in its health and health related efforts by the Constitution of India, which states in its Directive Principles that,

"The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being, without distinction of race, religion, political belief, economic or social condition."

* Addition of the word 'spiritual' was suggested by India, but was not accepted by others, who argued that it was included in social.

The 1983 National Health Policy recollected the aim of the Constitution of India for *“the elimination of poverty, ignorance and ill health”*, and its direction to the State, *“to regard the raising of the level of nutrition, the standard of living of its people and the improvement of public health as among its primary duties, securing the health and strength of workers, men and women, especially ensuring that children are given opportunities and facilities to develop in a healthy manner”*.

The United Nations Universal Declaration of Human Rights, 1948, of which India is a signatory, states that *“Everyone has the right to a standard of living adequate for the health and well-being of himself (herself) and his (her) family”* (words in brackets have been introduced).

2.2. The State and her people are proud of the several achievements made in terms of improved health and better access to health care. However, the State also recognizes that some goals have not been met. The State expresses certain current concerns and commitments.

- It is concerned about the current inequalities and inequities in health status by region, urban / rural location, gender, social and economic groupings.
- It is also concerned that good quality health care services are unevenly distributed and are inaccessible and unaffordable to a significant proportion of its citizens.
- It is aware of the escalating prices of diagnostics, medical therapeutic technologies and pharmaceutical products that are occurring as a result of globalization.
- It also recognizes the health impact and consequences of broader policies that affect employment, income, purchasing capacity, food security, education and pollution.
- The State accepts that public sector expenditure for health, while growing, does not meet recommended norms and is inadequate to support health services to respond to basic health needs. Out of pocket expenditure by people, largely in the private sector, while fairly substantial, has not produced requisite health gains and also results in adverse economic consequences to families, especially the poor. Judicious investment in health brings major gains in terms of human well being, development and economic productivity.
- It acknowledges the growing recognition, that access to comprehensive health care has a poverty alleviating effect.
- It also recognizes the urgent need to address poverty and inequality, and the social forces that underpin them, as poverty and ill-health linkages are strong, having been adequately researched and documented.
- It is committed to pursuing social development policies and increasing intersectoral coordination to accelerate improvement of health of all sectors of society in an equitable manner.
- It recognizes the critical role of the state to initiate and steer policies;
 - to ensure equity and quality of care;
 - to promote the sustainable development of public health services;
 - to promote community/ peoples' participation in the governance of health service;
 - to facilitate private and voluntary health sector growth as augmenting health care while maintaining professional and ethical standards and keeping in mind distributive justice;
 - to provide adequate resources to different levels of health care and to maintain accountability and transparency in functioning.

3. Karnataka – Mission Statement on Health and Health Care

- 3.1 Karnataka State, through a process of planned policies and strategies, and through ongoing reflection, research and learning, aims to respond to the aspirations of its people for better health and for improved access to good quality health care. It will do this by using policy mechanisms and instruments to create and support an enabling environment for further development of the entire health sector – public, private and voluntary. It will foster active participation of people through decentralized systems to take part in the governance and social control of the medical and health sector.
- 3.2 Karnataka state has rich spiritual, philosophical and cultural traditions. In keeping with these, the development and functioning of the health sector will be guided by values of equity, ethics, accountability, concern and respect for all people, participatory democratic functioning and respect for local health knowledge and culture. Principles of integration, decentralized governance, working in partnership, social inclusiveness, community participation, empowerment and gender sensitivity will be actively promoted through all its health sector interventions.
- 3.3 The Karnataka State Government will foster the further development of living and working conditions that improve the health status of all its people, particularly of the poor and marginalised. It will work, in the next five years, towards ensuring that all citizens have access to the basic determinants of health. These include nutrition, housing, employment, safe water, sanitation and education, recognizing that many of these lie outside the health sector. It will provide an enabling environment for the equitable growth and development of good quality health care services in the public, private and voluntary sectors, based on humane moral and ethical values. It will actively encourage a spirit of collaboration and cooperation between the different sectors and also with elected bodies and citizens' initiatives. It will put into practice the principles of public health and the primary health care approach, including the education of health personnel. It will govern and nurture the vast number of personnel working in its network of health services in the Directorate of Health and Family Welfare, in urban municipal and other bodies.

4. Karnataka health policy perspective and goals

- 4.1 Building on strengths of the system evolved over the years, specific will be undertaken at various levels and within a reasonable time frame, to further improve health status and increase people's access to health care, particularly for women, children, disadvantaged communities and regions, the disabled and the elderly in Karnataka.
- 4.2 A comprehensive integrated approach will be used to develop the health care sector, so that it is responsive to the health needs of the community, defined socio-epidemiologically.
- 4.3 There will be a strengthening of public health systems, using the primary health care approach, with an emphasis on community participation and inter sectoral coordination. Functioning referral systems will be built with secondary and tertiary health care services. Health management and hospital administration will be further developed. Building institutional capacity, including leadership, professional competence, communication skills, managerial skills and teamwork will be encouraged and fostered at all levels.
- 4.4 While efforts will be made to increase financial and human resources to the health sector, from public and private sources, issues of sustainability, cost-effectiveness, self-reliance, accountability and transparency will receive serious consideration.

- 4.5 Human resource development will be ongoing, through appropriately designed basic and continuing education and accreditation systems, which will be introduced in a phased manner for all grades of health and allied professionals. Social and community orientation will be a major focus.
- 4.6 Partnerships will be built with institutions and practitioners from the private and voluntary health sectors, also ensuring maintenance of acceptable professional and ethical standards.
- 4.7 Health promotion and empowerment will be a thrust area with active involvement of the education sector, media and civic society.
- 4.8 Indian systems of medicine, homeopathy, local health traditions, Tibetan medicine and other systems of healing will receive greater recognition, resources and support, to contribute to overall health goals.
- 4.9 Decentralized planning and functioning within the health system, and decentralized governance through the Panchayat Raj system will be developed further with professionalism, accountability and fairness.
- 4.10 Values of equity, gender sensitivity, accountability, transparency, fairness, self-reliance, humaneness, respect for local health knowledge and culture and participatory democratic functioning will form the guiding principles, with explicit efforts made towards internalizing them.

Indicators and systems for monitoring and evaluation will review and assess progress towards achieving specific objectives that derive from the goals.

5. Karnataka Health Policy Components

5.1 *Scope of policy – comprehensiveness and integration*

To facilitate the balanced development of health systems and services, responsive to health needs and aspirations of people, Karnataka State considers it necessary to have a comprehensive health policy statement in which different elements are integrated together and viewed as a whole. Various units and sub-sectors may evolve more detailed policy guidelines. However, this comprehensive statement will allow each one to be placed in the context of others. A comprehensive approach is important, since at the point of delivery of services or the point of contact between the public, the patient and the provider, there is need for horizontal integration.

The need for development of comprehensive health care was first identified by the Bhore Committee in 1946. The importance of integrated health services was reiterated by the National TB Programme in 1962. The damage caused by vertical programmes was recognized by the Kartar Singh Committee in 1973. It recommended integration, as did the Srivastava Committee Report in 1975. The State will undertake measures to operationalise a comprehensive, integrated health service, with promotive, preventive, curative and rehabilitative health care services at primary, secondary and tertiary levels, linked together with good referral systems.

5.2 *Public health approach and primary health care strategies*

The practice of public health principles was strong in the State till the sixties. These unfortunately declined since the seventies. The state recognizes the value of practicing public health and primary health care, for the common good of all citizens. It has committed itself to revitalizing these aspects. While the clinical or curative approach to health is focused on individual persons and their disease problems, public health tries to protect, promote, restore and improve the health of all people, through collective action.

Programmes, services and institutions give priority attention to disease prevention and health promotion, responding to the health needs of the population as a whole, particularly the deprived. Public health addresses the basic determinants of health. Epidemiology is one of the basic sciences of public health, studying the distribution and determinants or risk factors of disease and ill health in society. Public health interventions address communicable disease transmission and attempt to reduce risk factors for other diseases. An evidence based approach using action research and other sources will help develop and fine tune strategies. This will be supplemented by feedback from the public, from patients and from frontline implementers or health personnel. This will enable the development of a problem solving approach that is locally specific.

Public health and primary health care work in synergy, particularly emphasizing principles of,

- intersectoral coordination at all levels, especially at the district and below;
- community participation through panchayati raj institutions and other mechanisms and fora for involvement in decisions making concerning their own health care;
- equitable distribution of good quality care; and,
- use of appropriate technology for health.

The primary health care strategy does not focus only on the primary level of care but also on the secondary and tertiary levels.

The new public health recognizes and attempts to address the socio-cultural and political economy factors that affect health status and implementation of health programmes.

5.3 *Equity in health and health care*

Equity will be a key policy thrust, encompassing four main parameters, namely, region, disadvantaged groups (Scheduled Castes and Tribes), gender and vulnerable groups (street children, elderly).

a) **Region**

The state is deeply concerned by recent data analyses that reveal continuing regional disparities in health status, in distribution of primary health care facilities and in their utilization. The districts of Bidar, Gulbarga, Raichur, Koppal, Bellary, Bijapur and Bagalkot scored the lowest on all indicators. These districts will receive priority attention through a special package of services inclusive of infrastructure development, additional personnel, a good management structure and special efforts at community empowerment for health, particularly with women, through women sanghas and NGOs.

The districts of Belgaum, Gadag and Chamarajnagar have negative indices at a lower level, while Dharwad and Bangalore Urban lack government primary health care services. These districts also require attention.

The districts of Kodagu, Uttar Kannada, Chikmagalur, Udupi, Dakshin Kannada, Shimoga and Bangalore Rural have better indices regarding health determinants, health status and utilization of health facilities. However, specific pockets and population groups within them are more disadvantaged and vulnerable. Services here will be maintained with a focus on vulnerable groups and taluks or areas.

Taluk level disparities have also been identified in all divisions of the State. These will be factored into the planning process.

b) Disadvantaged groups

Persons from Scheduled Castes and Scheduled Tribes will receive priority attention. Besides primary care, access to complete treatment, follow up and referrals, to secondary and tertiary care services at very subsidised costs, will be assured. The camp approach will be replaced by ensuring good quality care for vulnerable groups within the health care system. For indigenous people a package with nutrition communicable disease control, care for specific diseases such as sickle cell anaemia and special norms for health services will be implemented.

c) Gender

The poor status of women's health, the declining gender ratio and poor coverage and quality of mother and child health services are areas of concern. Measures to improve women's health status and access to care will be implemented and closely monitored. Efforts will be made to increase the number of women doctors, senior health assistants (LHVs and ANMs) by providing adequate residential facilities and personal security. This will be done, particularly at Primary Health Centres and Community Health Centres. The districts with poor health indicators currently, namely Bidar, Koppal, Gulbarga, Raichur, Bellary, Bijapur and Bagalkot will receive high priority. Quality of maternal health services will improve, in particular emergency obstetric care. Widely prevalent conditions affecting women, such as anaemia, low backache, cancer of the cervix, uterine prolapse and osteoporosis will be addressed. Services for psychosocial problems and emotional distress will be developed. Empowerment of women for health will be encouraged and supported. Programmes for the special needs of adolescent girls and boys will be developed in collaboration with the department of education.

d) Vulnerable groups

Innovative, flexible and collaborative approaches for meeting the health needs of street children, out of school and working children, persons with disability and the elderly, will be used.

5.4 Quality of care

Having developed an extensive statewide health care infrastructure over the past five decades, an important policy thrust area in the next phase will be improvement in quality of care and patient satisfaction. Standards of care for different levels of health institutions will be developed. Mechanisms will be established to assure good quality medical and public health care in public institutions and to facilitate and ensure similar standards in the private and voluntary sector. Mechanisms may include accreditation, repeat registration, legal measures, mandatory continuing education for all health care personnel, patients charters and grievance redressal systems. Provisions of good care to patients will be the primary concern.

5.5 Multisectorality and intersectoral coordination

Intersectoral coordination has been inadequate even though its importance was recognized since the late 1970's. Working links, joint programmes and regular communication will be institutionalised between the Directorate of Health and Family Welfare and the Departments of Women and Child Development, Education, Rural Development and Panchayati Raj, and the Public Distribution System in particular. Links with the Water Supply and Sewerage Boards, Pollution Control Boards will be developed with clarity

regarding the roles of each department and areas of shared responsibility. Functional mechanisms at village/ward level, taluk, district and state will be developed.

5.6 *Public, private and voluntary sector partnerships*

Though already existing in an adhoc and often informal manner, public private and voluntary partnerships will be further developed in a planned, systematic manner in order to develop in spirit and practice a collective, community ownership for better health care and also for optimal utilization of health resources. District and Taluk health action networks and issue based networks will be encouraged with active participation from the public sector in such voluntary sector initiatives.

5.7 *Health Financing*

Greater attention will be paid to equitable health financing systems in view of the rising costs of medical care and the large out of pocket payments that often have adverse consequences on the poor. Social insurance schemes, prepayment schemes, selection of cost effective strategies including use of generic drugs and central purchasing will all be tried out.

State government spending on health will be brought up to acceptable norms, as investments in the social sector are recognized to produce gains in human development. The present allocation is not adequate to meet the needs; it is also much less than what has been suggested by various organisations, including the World Health Organisation. The allocation much be increased in a phased manner. Equitable proportions of spending will be in the primary, secondary and tertiary levels and between rural and urban areas. Resource flows will help increase access to quality health care in rural areas. Allocation and spending on health promotion will be enhanced. The indigenous systems of medicine and homeopathy will receive a higher share of resources.

A system for state health accounts with necessary data bases will be developed to monitor health revenue and expenditure, including those from externally assisted projects and centrally sponsored schemes. District wise health expenditures will be analyzed, reported in annual reports and made available to people on request. A larger proportion of funds will be allocated to the Panchayati Raj Institutions, including some untied funds to enable district authorities to respond to local needs. Districts with a lower ranking on the Human Development Index need more funds for health, but may also a lower capacity to utilize it. Besides increased resource flows, financial management and administrative capacity will also need to be strengthened in these districts. Systems of transparency and accountability will be established.

Pilot studies will be undertaken and encouraged to experiment with innovative health financing schemes such as community financing and social insurance, with particular focus on the rural and urban poor.

Since the Government of India has opened up the health insurance sector to private and foreign investment, the state government will introduce mechanisms to ensure that they operate in an equitable manner seeing that the interests of consumers/ patients, particularly the underprivileged are protected. Regulation of health insurance through appropriate authorities will be undertaken. Public sector insurance companies will be promoted.

5.8 *Health Planning*

Health planning will be undertaken at state level more and more, keeping in view national policy and programme guidelines. The state will institutionalize a strategic planning monitoring and review unit, into the Directorate/ Secretariat. The unit will use an evidence base whenever necessary and possible.

Epidemiological units will be developed alongside the surveillance units, at district level and state level. Descriptive and analytical work will be undertaken, by the epidemiological units, in priority diseases and health problems. They will help to improve the quality of data collected through the surveillance systems and HMIS.

The Strategic Planning Cell (SPC) will have a multidisciplinary team including economists, sociologists and anthropologists. Studies will be undertaken by them and also contracted out to other institutions, including educational institutions. The SPC will need to be supported by adequate facilities, such as computers, library and online information systems. Over time, a medical and health research body or council will be established at the State level with links with the State Institute of Health and Family Welfare and the Rajiv Gandhi University of Health Sciences. The council would undertake relevant research to support decision making and planning by the Health Directorate. This will make planning more systematic, rational and responsive to local needs and situations.

Health financing and health personnel planning will be a critical and ongoing part of the state health planning.

5.9 Health Management and Administration

Through a process of recruitment of trained personnel and in service training, skills in health management and administration will be strengthened. Two streams of the health cadre are being envisaged for medical care and public health respectively. The public health stream of the health cadre will have programme management and implementation skills. In the medical care stream, hospital administration, especially for hospitals above 50 beds, will be professionalised.

The Health Management Information System will be an important means for decision making and for introducing correctives at institutional and higher levels.

Issues such as leadership, governance, strengthening institutional capacity, developing efficient communication systems, within and between tiers and levels, will receive priority attention, with the help of experts and institutions such as the Indian Institute of Management.

Sections for engineering, construction and infrastructure maintenance; equipment procurement and maintenance; drug procurement and transport, will be strengthened in-house and developed further into specialized units. These are critical support areas for health systems to function optimally.

The newly introduced systems, under the Karnataka Health Systems Development Project (KHSDP), for contracting out non-clinical services such as cleaning, laundry, security, dietary department etc., will be reviewed and the positive aspects internalized. Minimum wages and working conditions of staff under these systems will be ensured.

5.10 Environmental Health

Environmental health is an important issue of concern with increasing pollution of air, water and soil due to rapid and sometimes unplanned industrialization, inadequate compliance with pollution control regulations, poor monitoring and control systems. Motor vehicle fumes also add to the toxic chemicals in the air. Excessive use of chemical pesticides including those, which are banned, are causing pollution of the food chain. The State will introduce measures to control exposure to these sources of pollution in order to protect its citizens from these health hazards. Environmental and health impact assessment studies will be undertaken around industrial and power plants, dams, mines etc. and clearances will be required before new plants are commissioned.

The health sector will also take responsibility to ensure the improvement of drainage and sullage systems and solid waste management in keeping with the guidelines of the committee set up by the Supreme Court of India.

The government will ensure water quality through a monitoring and surveillance system according to accepted norms and standards.

Health education and health promotion activities will promote personal hygienic practices and methods to safeguard against environmental health hazards.

5.11 Nutrition

The magnitude of undernutrition and deficiencies in Karnataka revealed by recent data, place nutrition as a major public health problem in the state.

The state policy reflects the National Nutrition Policy (NNP) adopted by the Govt. of India in 1993 and the National Plan of Action in Nutrition (NPAN) developed in 1995 by the National Standing Committee on Nutrition.

The *goals* to be achieved by 2007 are:

- (a) Reduction of under nutrition (Gomez classification) among pre-school children as follows - severe undernutrition to 3% from 6.2% (1996); moderate undernutrition to 30% from 45.4% (1996).
- (b) Reduction in anemia among women from 42% (1998) to 30%.
- (c) Reduction in anemia among children from 66% (1998) to 50%.
- (d) Reduction in new borns with low birth weight from 35% (1994) to 10%.
- (e) Elimination of blindness due to Vit. A deficiency and elimination of iodine deficiency in goiter prevalent districts.
- (f) Promotion of balanced, low cost diets using locally available foods for different age groups including children, adolescents, pregnant and lactating mothers and the elderly.
- (g) Improving household food security through poverty alleviation programme.

The *short-term interventions envisage* district wise goals and targets will be developed, nutrition interventions for vulnerable groups, particularly:

- (a) Focussing on under-twos with supplementary foods.
- (b) Expanding the nutrition intervention net (ICDS, UIP, ORT)* with wider coverage, regularity and better quality, with special attention to girls and underprivileged social groups.
- (c) Empowering mothers and families with nutrition and health education, with emphasis on caring for children and on low cost, locally available nutritious foods.
- (d) Control of iron deficiency anemia, Vit. A deficiency and iodine deficiency.

To achieve the above, the state will enhance its investment in nutrition interventions, will fill up vacancies and ensure full capacity of staff, strengthen supportive supervision and improve/ develop nutrition monitoring systems.

The *indirect, long term institutional and structural changes*, as also recommended by the National Nutrition Policy, 1993, are:

- (a) improved food security;
- (b) increased production of nutritionally rich foods such as pulses, oilseeds and ragi, and protective foods such as vegetables, fruits, milk, poultry, fish and meat;
- (c) improved

* Integrated Child Development Services (ICDS), Universal Immunization Programme (UIP), Oral Rehydration Therapy (ORT).

purchasing power by active implementation of poverty alleviation programmes; (d) strengthening the public distribution system; (e) preventing food adulteration; (f) improving the status of women; (g) ensuring community participation.

5.12 Population Stabilization

Population stabilization through fertility decline has long been a goal of the state government, in consonance with national priorities. It is widely recognised that the public sector in particular has generated awareness, demand for services and has also provided widespread access to contraceptive and family welfare services, especially terminal methods, and to health care. There have been resultant gains with declines in birth rates from 41.6 (1951-60) to 22.1 (1998-99), death rates from 22.2 (1951-50) to 7.9 (1998-99), and growth rates from 2.2 (1951) to 1.8 (2000 estimate). The Total Fertility Rate (TFR) is 2.13 and the effective Couple Protection Rate (CPR) is 60%. **Thus the State is fairly near to reaching replacement levels of fertility.** Data indicates declines in growth rates, particularly after 1981 in all districts except Gulbarga division (with slower or stagnant declines). This momentum of decline is likely to continue. Expert analysis suggests that **improvement in social development, quality of life and gender development will hasten the process of demographic transition. This will be an important component of the state strategy, with emphasis on districts in greater need.**

Drawing from the guidelines of the National Population Policy 2000 the State will follow certain **basic principles.**

- It will promote the spirit of voluntarism and will protect human rights. It will not adopt coercive strategies in any form.
- It will provide good quality contraceptive services, integrated with primary health care throughout the state. Reproductive technologies that are safe and effective will be used. Quality of care will be further improved with screening, follow-up services, managing and minimizing side effects. Spacing methods will be made more available and more popularized. Male methods will be increasingly used, reducing the burden from women only.

The government is committed to providing for informed choices and to seeking the consent of citizens.

- Responding to the specific situation in Karnataka the State will develop a special package for districts with greatest unmet need in terms of health and family welfare services. It will endeavor to increase the utilisation of these services by making them user friendly, being particularly sensitive to the special needs of women.

The objectives of the state in terms of population stabilization are:

- To provide good quality family welfare services integrated with general health care services to all sections of the population, particularly in areas of greater need, through strengthened health care infrastructure and health personnel and by developing partnerships and coordination within and between government departments, with industries, the private sector and voluntary sector.
- To bring the Total Fertility Rate to replacement levels in all districts at the earliest, by 2005.
- To achieve a stable population by 2030.

Strategies and Steps to be taken will include:

- Setting up a State Commission for Population and Social Development.
- Making all efforts to ensure adequate facilities for good quality mother and child health care.
- The State will attempt to develop a good civil registration system, working towards 100% registration of births, deaths and marriages. It will pilot this in a few districts and then expand. This will help provide accurate information regarding population dynamics.
- The State is concerned about increasing son preference that is adversely altering the gender ratio. It will implement legal measures such as The Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Act 1994 to prevent female foeticide. It will also strengthen norms about the intrinsic value of girl children.
- Introducing life-skill and population education for adolescent girls and boys, using methods that capture their interest and responding to their needs.
- Promoting delayed marriages for girls in particular and boys, delaying of the first pregnancy and spacing of the second child.
- The equitable and sustainable social development dimensions of a people centered population policy, including the education for all children; enhancing programme, implementation for basic amenities (and rights) such as safe water supply, sanitation and health care; increasing employment; and empowerment of women. Given the broad scope of interventions, implementation of the Population Policy would not be the sole responsibility of the Department of Health and Family Welfare, but will involve considerable intersectoral coordination for which working mechanisms will be established.

5.13 Education for Health Personnel

Learning and education in Indian tradition are accorded an almost sacred place and role. Karnataka has many achievements in the realm of education for health personnel, including medical and all allied health professionals. Institutions of high quality have developed. The private sector has been encouraged and a vast network of educational institutions has been established. The relatively new Rajiv Gandhi University for Health Sciences is working towards ensuring better academic and professional standards and norms.

Institutes and systems for education, training and continuing education play a critical role in the formation of medical and allied professionals, and in the maintenance of this human resource as a well-informed, up to date and motivated force. This is particularly important in a profession on whose decision-making abilities and practices depend the life, health and well being of people. The regulation of the profession including of its educational systems and institutions and the role of the state therefore are issues of great importance.

A situation analysis reveals many ills in the health personnel educational system and institutions and in professional practice and conduct. These include a rapid expansion in quantity, namely numbers of educational institutions and seats, at the expense of quality. There is an overproduction and supply particularly of medical graduates. In post-graduation, there is a mismatch between the specialties, with certain specialties remaining underrepresented. Growing commercialisation and corruption in student selection, during examinations, and in the professional practices of teachers, cause double standards, with dilution of professional standards and ethics. Student and patient interests are compromised with inadequate numbers of teaching staff, inadequate and poor quality infrastructure and equipment. Professional councils are often not playing strong roles to regulate their respective disciplines.

Keeping these and other factors in view, the health policy has evolved certain **principles and strategies for education for health personnel.**

- The focus will not be only on medical education of doctors but on all allied health professionals and on Indian Systems of Medicine and Homeopathy. The functioning of a variety of health professionals in teams makes for better health care services to respond to people's needs. Conducting team training will be encouraged.
- Norms regarding number of institutions and number of seats will be respected. Issuing of essentiality certificates and University affiliation for new medical, dental, nursing, pharmacy and physiotherapy colleges will be stopped for the next 3 years, with an exception for nursing colleges in the under-served areas of Karnataka. The distribution of institutions will receive greater attention. The number of students per college will be stipulated (e.g. maximum of 100 per batch in a medical college) in order to maintain quality.
- Similarly the moratorium on new Ayurvedic, Homeopathic and Unani Colleges will continue for two more years.
- Efforts will be made to improve the infrastructure and functioning of existing colleges (all systems, all levels) bringing them up to acceptable norms laid down by professional councils. The State will in particular initiate measures in this regard for government teaching institutions and hospitals. It will allocate resources for repair, maintenance and where justified extensions of buildings. Similarly systems for regular equipment repairs, and maintenance will be established. Staffing will be according to norms in the teaching and non-teaching category. Essential Services will be maintained round the clock especially emergency services, casualty, accidents, burns, X-ray, laboratory, blood bank etc. Uninterrupted supply of drugs required for such institutions will be made available.
- A study of financial and other resource requirements for these institutions will be made, with various options for raising of resources and for ensuring sustainability of these institutions.
- Closer working links will be encouraged between the University, educational institutions and health services for mutual advantage and development. Health Service professionals can undertake some teaching responsibilities, while a part of the teaching of undergraduates and postgraduates could be based in district and taluk hospitals, with postings to CHC and PHC's as well. Teaching staff also will be exposed to the reality of situations in such institutions so their teaching and research could be relevant. Teaching institutions, will work in collaboration with the Department of Health and Family Welfare in service provision in a specified number of PHC's / CHC's / Wards etc.
- Improvements will be made in the pedagogy of health science institutions. The University and Para-Medical Board will organise Teacher Training Programmes on Teaching Methodology for health sciences suited to adult learners. It will be mandatory for teachers to undertake these courses. Learner centred, problem-solving approaches will be used, moving away from the banking system of education. Each institution will be encouraged to initiate and run educational units with the specific objective to improve teaching capacity. Systematic feedback from students will help to modify training programmes. Performance appraisal of teaching faculty will help to further develop their competence.
- State Councils, such as the Karnataka Medical Council, Dental Council, Nursing Council, Pharmacy Council etc. need to be strengthened and professionalised. They should also to provide for

community representation through consumer groups, NGOs and then professionals being nominated or co-opted in order to reflect social and community concerns. The Councils could develop a good information and knowledge base and also a database regarding their membership.

A Commission at State level will bring together representatives from different councils, including Indian Systems of Medicine and Homeopathy along with government policy makers and University / board representatives to address issues raised by the National Education Policy for Health Sciences. The Commission will need to be alert to trends in the sector including negative trends mentioned earlier and make suggestions for regulations and correctives.

- The State Institute of Health and Family Welfare will be developed into a high quality centre for training and continuing education, especially in the fields of public health, management and ethics, linked with the Rajiv Gandhi University of Health Sciences. It will provide orientation and in-service training to personnel from the department of health. It will be linked with the district and health worker training centres. Its infrastructure will be upgraded especially, library, teaching halls with audiovisual equipment and computer facilities, as also personnel. It could offer certificate and diploma courses. It will be encouraged to develop links with other educational and specialized institutions, including the Indira Gandhi Open University. It will also undertake research studies

5.14 Rational Drug Policy

The government is aware of the advances and developments made by the pharmaceutical industry in the country and in the state, with good technological and production capacity, high turnovers and exports. However it is concerned that essential drugs of good quality are not available in adequate quantities to many, particularly in rural parts of the State. The rising cost of drugs especially in recent years, and adulterated substandard drugs are also areas of concern.

The State has developed a public sector pharmaceutical concern, the Karnataka Antibiotics and Pharmaceuticals Ltd (KAPL), which has been functioning well and at a profit over the years. There are also several small scale producers and larger Indian companies, besides foreign and multinational companies in the state. The public sector, organised Indian private sector and small scale sector are the major producers of bulk drugs, while the others operate in formulations and in production of inessential drugs which are more lucrative.

There are over 60,000 formulations of medicinal drugs in the market. The essential drug list of the World Health Organisation (WHO) has listed about 300 drugs necessary for secondary care, while only about 25 – 30 drugs are required for primary care. However these drugs, are produced much below requirements estimated according to epidemiological need and also below licensed capacities, resulting in shortages. These are drugs required for common diseases such as tuberculosis, worms, filaria, typhoid, anaemia etc. On the other hand there is abundant production of vitamins, tonics, health drinks, cough and cold preparations, over the counter preparations (OTCs), tranquilizers, antacids etc. The production and sale of irrational and hazardous drugs is another area of concern.

The State recognizes its responsibility as to ensure that all people are able to obtain the drugs they need or required at a price that they and the state can afford; that these drugs are safe, effective and of good quality. It will implement this responsibility through various measures, including better drug selection, pooled procurement, quality assurance, management and transparency in procedures, using resources in

a socially productive way, and encouraging participation and discussion from the public and professionals in this vital area concerning lives and health of citizens.

- The Government supports the concept of essentiality based on criteria of therapeutic need, efficacy, safety and value for money. Essential drugs only are selected for the Rate Contract lists. Essential drug lists for different levels of institutions will be adopted.

Spreading of information concerning essentiality and essential drug lists to medical professionals, pharmacists and to citizens will be promoted in consumer and patient interests. The patients / citizens right to information will be protected by making available information about harmful, hazardous, irrational and essential drugs.

- The government supports the system of monitoring Adverse Drug Reactions (ADR) already initiated by the Karnataka State Pharmacy Council. It will increasingly get all its institutions linked to the system. Early detection of ADRs will allow for corrective actions to be initiated.
- The state through its technical bodies will keep abreast of latest developments regarding drugs and therapeutics and will initiate suitable action to withdraw hazardous drugs from the market in consumer interest e.g. baralgin (a hazardous antispasmodic), novalgin (a hazardous analgesic), enteroquinol (a hazardous antidiarrhoeal). Outside experts, the pharmacy council and consumer activists will be inducted into technical bodies. The names and lists of banned drugs and their formulations and trade names will be widely publicized.
- Drug package labeling and package inserts will be made to carry unbiased drug information and cautions to consumers of warnings for drugs not to be taken during pregnancy, drugs not recommended for the elderly, for children, for people with liver or kidney impairment etc. This should be made available in Kannada also and in print large enough to read. The state recognizes its responsibility in protecting the health of its citizens against iatrogenic problems, since health is of higher value than profits to companies.

In this it will also endeavor to enhance the knowledge of medical and allied professionals through professional and other bodies. The ethical and legal aspects of the need for rational therapeutics will also be highlighted.

- It will strengthen the Drug Control System by providing for adequate staff with the required qualifications. It will introduce inspection of good manufacturing practices as recommended by WHO. Systems will be established wherein prescribers can send drugs they suspect to be substandard for testing. Random samples of drugs will be sent for testing in recognised laboratories in the state and in different parts of the country.
- Key staff and doctors will be trained in rational drug policy issues and in how to identify and solve problems relating to drug prescription, dispensing and consumption. Newsletters and updates on drug categories, cautions, contradictions, side effects, dosage for different age groups etc., will be made available to improve quality of service to consumers.
- Monitoring and studies of prescription practices, pharmacy practices etc. will be encouraged to provide regular feedback for continuous improvement in the area of rational therapeutics

- Rational drug policies for the Indian Systems of Medicine and Homeopathy will also be introduced following discussions with their Councils and experts.
- Measures to increase effectiveness of drug procurement, warehousing and distribution are also being undertaken.
- Expert groups will look at drug pricing issues and issues relating to access to drug for persons with HIV / AIDS with psychiatric illnesses and other diseases requiring new drugs which fall under the new patent laws and are therefore out of the reach of the majority of people.

The State will study the impact of the new patent regime on the pricing, production patterns and availability of pharmaceuticals. Necessary measures will be taken to protect the interests of patients and consumers.

- The State will support strategies in collaboration with professional and consumer bodies to ensure safe drugs and rational drug use for people. It will be alert to implementation of drug policies, including bans. Problem drugs or unsafe drugs will not be allowed to be marketed or used e.g. pediatric preparations of loperamide or diphenoxylate, unnecessary combinations of antibiotics with antidiarrhoeals, analgesics, irrational over use of second line antimalarials (mefloquin) and antitubercular drugs, growth stimulants, harmful contraceptives, hormone replacement therapies and psychotropics.
- A State drug formulary and therapeutic guidelines will be developed, adopted and regularly updated. Use of generic prescribing will be promoted.
- The Directorate of Health and Family Welfare will take responsibility for the drug policy and will not leave it only to the Departments of Petrochemicals or Industry. Forums for intersectoral working will be made functional.
- Pharmaceutical Companies will need to follow nationally and internationally accepted codes of marketing practices, registration and re-registration of drugs for production will also have to follow acceptable norms especially with regard to advertisements, sponsorship, indirect promotional methods, and availability of unbiased information.
- Drug donation guidelines will be developed and implemented.
- Efforts will be continued to attain and retain self-reliance in the production of all essential drugs and vaccines. The economy of scale will help these to be available at low cost. Modernization and upgradation of public sector facilities including infrastructure and personnel will be undertaken so that they can contribute to contain drug and vaccine prices and to maintain gold standards.

5.15 Medical Industry (diagnostics, biomedical equipment, health accessories)

The production, procurement and marketing systems for diagnostics, medical equipment, health accessories and educational material will be regulated, keeping in mind need, quality, cost effectiveness, safety and ultimately patient and consumer interests.

There is need for a body to lay down standards and for production to be brought within the purview of a legally binding act. Necessary action will be taken in order to safeguard consumer interest.

5.16 Medical and Health Research

Research and the spirit of enquiry upon which it is based provides the critical questioning and thinking required in the quest for new solutions to old and new problems. Rapid social, technological and environmental changes are posing new disease and health problems. There is a need to actively study these changes and evolve our own ways of addressing them.

Karnataka State prides itself of having premier scientific, technical and research institutions in various fields. It will partner with these institutions and actively foster systematic data collection and research in the public health services and educational institutions so as to inform the planning process. It will develop the necessary bodies and facilities for a purpose. A research advisory group would steer the research process, raise funds and review technical quality and achievements.

5.17 Indian Systems of Medicine and Homoeopathy (ISM&H)

The country and Karnataka have evolved and cherished a rich heritage of traditional Indian systems of medicine and healing. These classical systems of Ayurveda, Siddha and Yoga have the world's earliest written texts and pharmacopia. They have survived through the centuries and are currently gaining increasing global recognition and respect for their insights and holistic approach to healing and efficacy. They have a large number of practitioners, educational institutions, and pharmacies/centres where medicines are prepared. They are linked to local health traditions and practices. Other systems such as Unani, Tibetan medicine and homeopathy also contribute to health care in the state.

However, ISM&H have been neglected in health planning and provisioning of resource by the state. In future this will be compensated for and reversed. They will receive increased state support and resources to promote optimal growth according to their own genius. They will be involved more in health decision making and in provision of health services, possibly being located within the same premises as modern medicine, so that people can freely exercise a choice.

5.18 Health Promotion

Health education and Information, Education and Communication (IEC) activities have in the past few decades been fragmented. They are linked to specific programmes each of which has an IEC component. It is envisioned that health promotion will receive a major thrust and become the most important health intervention in future. It will move focus from communicating information to promoting positive behaviour change and from being instructive to becoming empowering. It will address health determinants, diseases, prevention and control, using appropriate methods and idioms to different settings and varied groups such as school children, youth, women, workers/farmers etc. It will enable people to increase control over and participate actively in improving the health. Local folk media will be used.

The state will allocate adequate resources for health promotion and take measures to build capacity for health promotion, using talent available from all sectors and promoting creativity.

6. Policy Components on Priority Health Problems and Issues

6.1 Communicable / infectious diseases

The State recognises that communicable diseases such as water borne diseases, air borne diseases particularly tuberculosis and acute respiratory infections; vector borne diseases namely malaria, filaria, dengue fever, Japanese Encephalitis and Kyasanur Forest Disease; sexually transmitted diseases, HIV / AIDS, Hepatitis B and C ; among others, still account for the largest share of the burden of disease in

Karnataka, resulting in both avoidable preventable morbidity and mortality. People's demand for better and effective services that can control these diseases, has been articulated several times.

The state will accord highest priority to reducing and preventing the transmission of these diseases by allocating adequate resources for the purpose and by using strategies based on the principles of public health and primary health care. It is aware that cost effective methods for control of these diseases are well known. It also feels that investments in health and health care today, produce gains in terms of reduced preventable suffering, better health, well-being and improved productivity. Besides resources and technical inputs, the state recognises that governance, leadership, management and good administration are critical in achieving these goals.

The state through an inter-sectoral approach will invest in nutrition, in safe water supplies, in sanitation and waste disposal, in housing and education, in interventions to improve women's status, recognising that addressing these determinants of health are part of a public health approach and have deep and long lasting gains in health. The entire state will be covered by these basic services in a phased manner.

The communicable disease control programme will be integrated horizontally into the general health services. Particular attention will be paid to the centres closest to the homes of people namely the 1685 primary health centres and their associated sub centres. Special care will be taken to develop and nurture the personnel working in these peripheral centres and in the anganwadi's.

A disease surveillance system, with district epidemiological and microbiological units will be made functional statewide within 5 years. Diagnostic equipment, drug supply and communication systems will be made more efficient. Continuing education will update peripheral health personnel on new information and developments.

a. Tuberculosis

The State will work towards the following (a) increased case detection to 75% of expected cases; (b) early case detection, with an emphasis on sputum microscopy. Developing an acceptable ratio between sputum positive and sputum negative cases; (c) good recording and reporting systems, with possibly notification of TB. Research and analysis will be encouraged; (d) ensuring uninterrupted drug supplies; (e) complete treatment with cure rates of at least 85%.

It will cover the entire state at the earliest with the Revised National TB Control Strategy, particularly emphasizing the preparatory training of all staff and setting up of supervisory mechanisms for diagnosis and treatment.

Provision of microscopes and filling of all vacancies will be undertaken. Directly observed or supervised therapy will be used judiciously where necessary. Active involvement of patients and their families in the treatment process will be fostered.

Recognizing that TB is an important co-infection with HIV / AIDS, special attention will be paid to providing diagnostic and treatment facilities to all persons with HIV / AIDS.

The state recognises that poor implementation of the RNTCP will result in increased drug resistance and even to Multi Drug Resistance. It accepts its responsibility in minimizing this by ensuring good treatment practices in the public and private sector. It will also monitor the situation by setting up facilities for culture and sensitivity in laboratories at the earliest.

b. HIV / AIDS

The State will take proactive steps to create public awareness regarding this rapidly growing problem. Preventive education, will be undertaken with adolescents through life skill education, with workers in the organised sector; with women through Sanghas and women's organisations; with young adults in particular; and through the general mass media.

- District based voluntary counselling and testing centres (VCIC) will be established in all district hospitals.
- Lack of access to treatment is a difficult ethical issue which will be addressed by attempts to reduce prices of antiretroviral drugs, through negotiation and collaboration with various agencies.
- Treatment to reduce mother to child transmission will be introduced.
- Home based care would be encouraged and supported.
- There will be no discrimination in providing treatment facilities in all public sector hospitals. Private sector institutions will also need to be non-discriminatory
- Training of staff will be undertaken.
- Treatment facilities for Reproductive Tract Infections (RTIs) and Sexually Transmitted Diseases (STDs) will be expanded, with conscious efforts to maintain privacy and professional confidentiality.
- Measures will be enforced reduce transmission of HIV through blood transfusion and blood products.
- Strong advocacy and social mobilisation efforts will be made at all levels.
- Surveillance and operational research will inform the development of the programme.
- NGO and philanthropic organisations will be supported to run care centres for patients where home care is not possible.
- The State will be responsive to problems such as children with HIV / AIDS, orphaned children, abandoned patients, legal issues etc.
- The State will promote collaboration between public, private and voluntary sector, all departments and with citizens groups in responding to the problems of HIV / AIDS.
- The control of HIV / AIDS is closely linked to control of sexually transmitted diseases (STDs) and Reproductive Tract Infections, Hepatitis B and C. The overlapping elements in strategies will be made convergent and all will be operationalised through general health services.

c. Vector borne diseases

Vector control strategies for the different diseases (e.g. malaria, filaria, dengue fever etc.) will be made coherent and integrated, retaining specificity required for different vectors. A judicious mix of bioenvironmental methods and use of pesticides, including neem, will be utilized and popularized. The adverse effects of pesticides are documented and of concern. Caution will be exercised in selection and use of pesticides.

For malaria, early diagnosis and prompt treatment through active and passive surveillance; good laboratory diagnosis and reporting systems; vector control with an emphasis on bio-environmental methods; personal protection; prediction, early detection and effective response to outbreaks; health promotion and most importantly involvement of people through proactive social mobilization efforts will be sustained. Epidemiological mapping and study of time trends will help in identifying areas needing specific attention.

For filariasis especially in endemic districts, in addition to the general principles of vector control and the guidelines of the National Filaria Control Programme, treatment of acute and chronic filariasis, detection and treatment of microfilaria carriers will be undertaken. Single dose mass (diethyl carbamazine) DEC therapy will be considered after expert review.

The increasing spread of dengue fever is being recognised as a public health problem. The new expanded disease surveillance system, backed by the public health laboratory service, will help to record emerging epidemiological patterns. Facilities for diagnosis and treatment will be made available; health promotion for households regarding peri-domestic measures to reduce vector breeding; adoption and implementation of urban, municipal bye-laws to control vector breeding grounds will be initiated.

6.2 Women's Health

The State has several ongoing schemes for girl children and women. These will be expanded, strengthened and developed further.

The State recognises several societal factors that influence and affect women's health, such as lower social status, social exclusion and isolation; lower access to and utilisation of health and other services especially in some districts; poverty, leading to overwork, fatigue, stress, undernutrition, and a host of effects; environmental degradation reducing access to water and fuel; migration for economic reasons increasing risk of ill-health; violence in the family, at the workplace and in public places; along with education, employment, mobility, empowerment and political participation which have positive influences. The state is committed to women friendly policies in all these areas. It will also undertake reviews of the implementation of schemes addressing these issues and studies of their impact.

More specifically, in health, policies will work towards the following:

- A focus on the entire life course or life cycle of women from conception to death. This means ensuring adequate nutrition and physical and social conditions for mothers during pregnancy, providing access to good mother and child health services, implementing measures to prevent female foeticide and female infanticide. Women will have access to the entire gamut of services till old age and death.
- Focus on the woman/women as a whole including physical, psychosocial and emotional aspects. This will mean a major shift from the predominant focus on family planning and reproductive health, to conceptualizing and responding to women as persons of dignity and worth and not only on their role as procreators and mothers.
- Using strategies empowering women for health, where women are important agents for change.
- Using a community health and community development approach that facilitates community mobilisation, community participation, community organisation and community action, wherein the role of men is also important. As many health problems of women have social roots, this strategy will allow for social interventions rather than medical interventions only.
- Health promotion for women focussing on empowerment and community action.
- Access to care for women will be enhanced by increasing the number of women health professionals, particularly at primary care levels and in the first referral units. Provision of adequate living facilities, equipment and drugs will also be ensured at these centres. Priority attention will be given to Bidar, Koppal, Raichur, Gulbarga, Bellary, Bijapur and Bagalkot districts.

- Gender and age disaggregated data to improve the database and analysis of problems, and the impact of interventions. Qualitative and quantitative indicators will be developed and used.
- Special attention will be given to developing counselling and mental health services for women at district and taluk level with trained professionals and by short term training of health workers at primary care levels to respond to needs at community level.
- Facilities for diagnosis and treatment of STDs and RTIs will be made available at the primary care level supported by a referral system.
- Education regarding reproductive health will be given higher priority.

6.3 Children's Health

Karnataka State has a special interest in and commitment to the health and well being of children during their intrauterine period, infancy, toddler years, school age and adolescence. Its interventions reach out through MCH programmes, through anganwadis of the ICDS scheme through schools and colleges. A policy document, "The State Programme of Action for the Child" brought out in 1994, reiterated the state's commitments, in keeping with the spirit of the National Policy for Children in 1974, the World Summit for Children in 1990, the four sets of Rights of Children (to survival, protection, development and participation), and the National Plan of Action: A commitment to the Child, adopted in 1992. The State will be guided by the principle underlying the national plan, namely "**first call for children**", wherein the essential needs of children will be given highest priority in allocation of resources at all times. This will also be applied specifically to the spheres of health and nutrition, as recent data reveal unacceptably widespread high levels of undernutrition and anaemia in Karnataka, which leads to illhealth and stunted growth and development. Specific efforts will be made to reach children, especially from socially deprived groups, who are still unreached by the ICDS system and who are out of school. A multisectoral approach will be used to provide services for working and street children, and to address underlying issues that result in their having to work.

- The state will undertake all efforts to **ensure child survival** with no damage to the processes of growth, maturation and development. Continuing efforts will be made to reduce infant and neonatal mortality.
- The coverage and quality of services of the **Integrated Child Development Services (ICDS)** with regard to health, nutrition and care will be improved by providing adequate resources and training of all levels of personnel. Supervisory and monitoring systems will be strengthened. Recognizing the importance of the child care, responsibilities of anganwadi workers, who are volunteers on an honorarium, caution will be exercised in adding additional responsibilities that may be detrimental to their prime responsibility. Constructive partnerships with gram panchayats and parents will be developed and linkages with Primary Health Centre staff will be made more functional and regular. Quality of food given to children will be ensured and health promotion and nutrition education will be undertaken more proactively and professionally. The most needy children, including scheduled castes and scheduled tribes, will receive particular attention. Disaggregated data by age, sex, taluk, and social grouping will be regularly validated and analysed.
- **School health programmes** will be developed, being initiated by the public sector in partnership with parents, voluntary organisations and the private sector. The goal is that a health promoting school will provide a healthy environment, health and nutrition education, school health services,

physical education and recreation/ extra – curricular activities. Through health promotion, preventive health, screening and early detection it helps prevent disease and disability.

School age children account for about 25% of the population. The school health programme will help attain their full potential in physical, psychosocial, emotional and intellectual growth and development. The two-fold purpose is improvement of health and health promotion. Key strategic interventions include training of over 3.15 lakh teachers in the 58,000 schools through a training of trainers; school curriculum review of health related topics; health promotion using activity based learning principles; a focus on life skill education to prepare children for life; ensuring universal coverage with good quality school health services including follow up treatment.

Schools will be seen as community institutions and will be centres from where **out of school children will also be reached.**

- **The adolescent age group has been relatively neglected and currently faces greater risk during this phase of rapid social transition.** Adolescent care and educational programmes will be designed and implemented with sensitivity. These will include family life education, life skill education, basic understanding of sexuality, interpersonal relationships, conflict resolution, coping capacities for dealing with stresses of increasing responsibilities and expectations from others.

6.4 Mental Health

The burden of suffering due to mental illness is large. Research work done over the years by premier institutions have helped to quantify this in Karnataka. At least 2% of the population suffer from severe mental morbidity at any point of time and an additional 10% suffer from neurotic conditions, alcohol and drug addictions and personality problems. A large proportion of outpatients (20-25%) in general health services have somatoform disorders and come with multiple vague symptoms. Unsupported and untreated mental illness has an impact on families as well. Mental ill health is thus an issue of public health importance, requiring proactive, sensitive interventions, particularly since more effective and better management is now a reality.

However, there continue to be shortages of trained personnel in Karnataka, compounded by maldistribution of facilities and staff with a greater urban concentration in big cities.

The state will make systematic and sustained efforts to enhance mental health services by:

- Improving training in psychiatry and psychology in the undergraduate medical and general nursing courses.
- Introducing district mental health programmes in a phased manner by strengthening psychiatric teams and services at district hospital level and planning for counselling services at taluk hospital level.
- Ensuring minimum standards of care for mentally ill patients.
- Providing for mental health care at primary care level by training primary health centre medical officers and staff, using manuals already prepared by NIMHANS.
- Encouraging and making provision for care facilities for persons with chronic mental illness, through NGOs and other organizations.
- Introducing the mental health component into school health services on a pilot basis in different districts and later expanding it.

- Supporting broader societal strategies that address violence, particularly against women; discrimination in any form; substance abuse; poverty and destitution.
- Establishing institutional mechanisms at the State level through which mental health care services can be promoted.
- Caring for and nurturing health care personnel, who are carers working under difficult conditions.

6.5 *Prevention and control of non-communicable diseases*

Karnataka and India, along with other developing countries, carry a double burden of communicable and non-communicable diseases. The latter include, in particular cardiovascular diseases, including hypertension, cancers and diabetes. These have on the whole received less public sector and policy attention due to the magnitude of other problems and issues. However with a future perspective, especially considering rising life expectancies, growing urbanisation and industrialisation in the state, and rapidly changing life styles including diets, the state will provide greater support to the prevention and control of non-communicable diseases.

- It will use a public health approach by adopting strategies to reduce the risk factors for these diseases and by using health education to promote healthier life styles.
- It will initiate policies to stem the rapid increase in production, advertisement, aggressive marketing and use of Tobacco and Alcohol products. Over 25 serious diseases are associated with the use of tobacco and several diseases and social problems are linked to alcohol. These are described as communicated diseases. They are both addictive substances and once hooked, their manufacturers are assured of consumers for life, even though for shortened lives. Policies required for their control are broad and include bans on sponsorship of sports and entertainment; bans on direct and indirect advertising; higher taxation; sales to be permitted to only over-18s; sales barred within certain distances from educational institutions; and public education, especially among children and youth as part of life skills education; education of health personnel.

In the case of *tobacco*, measures include banning smoking in public places to prevent passive smoking and working towards alternative crops and alternative employment. Chewed tobacco in particular is a growing problem with widespread use among women (40-60% in different groups) and even among children as its addictive nature is not widely known. Comprehensive Tobacco Control includes smoked and chewed tobacco.

In the case of *alcohol* there is a need for strategies to help women and children cope with men who drink heavily. De-addiction strategies using group therapy such as alcoholic anonymous groups will need to be supported, besides individual therapy and counselling.

Education regarding tobacco and alcohol will be included in school and college curricula.

- Diagnosis and treatment for non-communicable diseases will be made available at primary health care level. This will require preparation of treatment guidelines and supply of diagnostic equipment and drugs.
- Recording and reporting of non-communicable diseases as per the International Classification of Diseases will be introduced into the diseases surveillance system.

- The **cancer control programme** will also be strengthened by tobacco control, health education, early detection and provision of treatment. Facilities will be made available at regional level and later in a phased manner in some districts where medical colleges exist. Grants provided by the national programme will be fully utilised.

6.6 Disability

It is estimated that about 2-3% of the total population of Karnataka consists of disabled people with 76% in rural areas and 58% men. Disabilities include locomotor, visual and learning disabilities, hearing and speech impairment, mental illness, mental retardation, multiple disabilities, etc.

An inclusive approach will be used for persons who are differently challenged or persons with disability, with their full participation in decision making and implementation.

The Department of Health and Family Welfare will increase its role and responsibility in respect to disability, which has been largely under the Directorate of Welfare of the Disabled, under the Department of Women and Child Development.

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act of 1995 will be made more widely known and implemented. Interventions will need to include medical, social and environmental components. The different steps would be:

- Disability prevention — through universal immunization, good nutrition, MCH, accident prevention through drink and not drive policies, helmets for two wheelers and car-seat belts etc.
- Disability limitation – through prompt treatment, particularly at primary care levels.
- Reducing the transition from disability to handicap – by rehabilitation. Establishing rehabilitation units at district hospitals.
- Actively supporting Community Based Rehabilitation.
- Providing access to aids and appliances to those who cannot afford them.
- Using apex and specialized institutions in the state for training of levels of health workers.
- As per the Medical Council of India recommendations, starting Physical Medicine and Rehabilitation departments in every medical college.

6.7 Occupational Health and Safety

Though services exist in some large public sector and private sector units, this specialty needs greater support. The focus will be on the agricultural and unorganised sectors who comprise the largest proportion of the work force and who are at risk because few safety devices and precautions are used. The services of institutions like the Regional Occupational Health Centre and experts will be utilised to evolve a strategy.

6.8 Dental Health/ Oral Health

Oral health has so far received little policy attention. However, the state recognises that periodontal diseases and dental caries are widespread in the population. These impact on general health as well. Fluorosis is prevalent in certain taluks and districts (North Karnataka, Kolar, Pavagada). Oral cancers are one of the commoner cancers. The state has the largest number of dental colleges in the country, numbering 41, of which 40 are private. However, there are concerns regarding substandard quality and the lack of impact on oral health in the state.

Karnataka will integrate oral health within its health care services by providing equipment and trained personnel at CHC level and services at PHC level through the medical officers and dental/oral hygienists. School health programmes will have dental/oral health as an important component both for services and health promotion.

6.9 *Emergency Health Services and Trauma Care*

Initiatives to develop this area will be strengthened and expanded. Besides accidents and injuries this will include emergency obstetrics care; snake/insect and dog bites and stings; and other medical emergencies. Existing centres of excellence in the state will be utilised to train expand services statewide. Transport and communication links will be established and 24 hour services provided in selected institutions. Training in first aid and life support systems will be imparted to children, teachers, factory workers, drivers and conductors and paramedics. Preventive measure such as helmets and seat belts will be encouraged. The right of the citizen as determined by the Supreme Court to access emergency care in any hospital and to received the first line of critical care will be publicised.

7. *Cross-cutting Policy Issues*

7.1 *Medical and Public Health Ethics*

The state is aware of public dissatisfaction and loss of confidence in the health services, particularly of the public sector. The state takes cognizance of expressions of dissatisfaction through the media, elected representatives, people organizations and movements and through the issues of concern raised by the Task Force on Health in its Interim Report. In keeping with its constitutionally mandated responsibility and in collaboration with professionals and the people it represents and works for, it will initiate and make functional institutional mechanisms to provide for checks and balances to protect public interest; and human rights including the right to health and health care.

- The state will promote the principles and practice of **medical ethics** in all its institutions, in all sectors and in all systems of medicine.
- The state will ensure the practice of **public health** ethics in its decision making, resource allocation and in implementation of policies and programmes.

7.2 *Policy Process and Implementation Factors*

The policy document is just one step in the overall ongoing policy process that makes explicit the current concerns, intentions and priorities concerning health by government.

The competence and attitudes of implementers, especially at the point of contact with patients or people is critical in giving life to policies and programmes. Human resource development to develop competencies and capability and caring attitudes will be a priority with a focus on front line implementers and just not on leadership. Energising the primary health centres and all health institutions is our goal. Good communication, supportive supervision, regular updates, small group work, decentralisation of decision making and financial powers, participatory methods, better governance and accountability systems, along with strategic planning at all levels will be the strategic approaches to better implementation.

Strong politico-economic and social forces also influence implementation in directions most often against the interests of the poor and marginalized groups.

These include professional bodies and interests; industrial and business interests of pharmaceutical,

diagnostic and medical equipment manufacturers; the media; donor agencies; International agencies and others. On the other hand, patients and people, particularly the poor, are relatively unorganized and most often unheard in the policy process. The state recognises that it represents this public interest and it commits itself to undertaking this responsibility to improving health and health care of its citizens.

8. *Conclusion*

In conclusion, through this policy document Karnataka state is placing health high on its agenda. It reaffirms the wisdom of the sages who said that health is wealth. It will translate this into action by allocating adequate human and financial resources, by good governance and institutional capacity building. "Better health for all now" can only be achieved if it is seen as a common endeavour of all sections of society. The state will play a facilitating role in harnessing resources, energies and ideas from the private and voluntary sector. It will stay committed to its mandate and will work towards equity, integrity and quality in health and health care.

Recommendation

- *The draft Integrated Health Policy should be adopted after dialogue with Directorate of Health and Family Welfare Services, other Government Departments, Voluntary Organisations and the Public.*

23. VISION 2020

"The journey of a thousand miles begins with one step."

- Lao Tse

HEALTH OF THE PEOPLE OF KARNATAKA

The emerging picture of the health of people of Karnataka, 2020, is a bright one, though with many patches of varying shades of gray. The gains made have been possible because of the political will and action taken at all levels to improve health and health care. People's awareness and participation have contributed considerably to improve health status. Conscious efforts by the Government to meet the needs of all the people have helped in the betterment of health. The overall development of the State has improved the health determinants. The availability, accessibility and utilisation of health care and public health have led to improvement of the health of all the people.

Karnataka can take up the challenge of 'health for all'. It is now in a position, with the reforms and restructuring in place, to make the health system work. Some of the health indicators have shown that the efforts to improve the health of the people are already bringing forth the desired outcomes.

However the people of the State have visions and dreams of going beyond where we are. To move forward towards these shared aspirations, a vision 2020 is being articulated with goals and indicators to strategise and focus our collective energies. They will also become a referral point for us to review our progress.

1. Infant Mortality Rate

The Infant Mortality Rate in 2020 will come down to less than 25 from the present figure of 58 (1999). Proactive measures will need to be taken to achieve these. This goal is being set keeping in mind the stagnation and even slight worsening of IMR occurring over the past 5 years in 10 states. The process will include the availability of the second birth attendant, recommended by the Task Force for Health and Family Welfare. She will look after the newborn, ensuring spontaneous breathing and preventing hypothermia and other problems, thus reducing neonatal deaths, an important component of infant mortality. Improved birth weight as a result of better nutrition of the mother starting from her adolescent period and avoidance of infection are other factors helping in the reduction of infant mortality. Better quality and complete coverage of antenatal care, access to emerging obstetric care, implementation of the universal immunisation programme, health promotion including nutrition, education of mothers and families and a focus on caring for infants are all part of the intervention required to achieve lower IMRs.

2. Under – Five Mortality Rate

There will be reduction in the under – 5 mortality from 69.4 (1994-98) to 40-45. The child is healthier as a result of certain measures taken: commencement of breastfeeding immediately after the birth of the child (benefiting from the goodness of colostrums); exclusive breast feeding for the first 6 months; better universal immunization coverage (with a good cold chain system) including immunization against measles; better nutrition

with weaning (supplementary) food from 6 months (food being given free to the poor), child care and psychosocial stimulation. This will be achieved through working collaboration between anganwadis and primary health centres / subcentres.

3. Maternal Mortality

Maternal mortality has been unacceptably high. Even the statistics available are questionable. There will be reduction because of better health of the mother preventing undernutrition and anaemia (especially the common iron deficiency anaemia with intake of iron-folic acid tablets), availability of prenatal check-ups and of the services of trained birth attendants at all deliveries, and better management of high risk pregnancies at the first referral units (Community Health Centres and Taluka Hospitals as also urban maternity homes); who will be equipped to manage problems like post partum haemorrhage and other obstetric problems. Action taken will reduce the maternal mortality rate by 50% or more by 2020.

4. Crude Birth Rate and Crude Death Rate

Both the indices have fallen. The Crude Birth Rate has come down to 14 in 2020 from 21 in 2001; the Crude Death Rate has come down to 7.0 from 8.0. The Total Fertility Rate is down to 1.6; the Couple Protection Rate has gone upto 75%. Population stabilization is in sight. We need to achieve this with gender equity, guarding against sex selection practices unfavourable to girls.

5. Equity

Having been accorded high priority, it is considered that by 2020 there would be a measurable reduction in inequities as shown by disaggregated data analysis.

The regional (district, taluka) disparities would be reduced, with respect to the provision of primary health care facilities, utilisation of health services by people, the determinants of health (through developmental activities), and improved health status.

Gender disparities will show a reduction through the process of sensitization of all people, including the health care staff at all levels to gender related issues and action by providing access to women's health, professionally by increasing the number of women health professionals and through women's health empowerment programmes.

Much work will need to be done with respect to removal of disparities in health due to socio-economic (class / caste) inequalities.

6. Quality of Health Care

Quality will be the watchword with all personnel taking pride in the quality of their work.

There is increased awareness of the need to focus on quality, maintaining structural, process and outcome standards in all health care interventions. The legislation on quality assurance and registration of health care institutions has helped to improve quality. The process of accreditation of all health care institutions is gaining momentum.

7. Integrity

A major factor which has been eroding public health care services has been corruption. Services which were supposedly free can be obtained only after satisfying the demands made by the health professionals and other staff. This is reduced through steps taken by the Department to make known to patients and the public the rights

of patients, the citizen's charter and the Right to Information Bill. Increasing emphasis on ethics and integrity in the training programmes, better governance, supervision and creation of the vigilance cell will all help in reducing corruption in health care services. The balancing role of civic society organisations will be encouraged by involving people's organisations, NGOs and elected representatives in various capacities.

Action taken with respect to recruitment, postings and transfers of doctors and others has reduced corruption. These steps will be continued.

There were many complaints of corruption by examiners in University examinations. Action by the University to remove such examiners has produced the desired results.

8. Community Participation

One of the requirements for improved primary health care is community involvement. There is greater degree of participation of the people in all matters affecting health and health care. This has been helped by the institution of health committees from the village level onwards.

9. Water Supply and Sanitation

By 2020, we envisage complete coverage of the entire population with safe potable water supply, and coverage of 80% of the population with sanitation facilities, through an intersectoral effort.

There is improvement in water supply, an important determinant of health. The Bangalore Water Supply and Sewerage Board and the Karnataka Water Supply and Drainage Board are working towards improved water supply in cities and towns. The Department of Rural Development and Panchayati Raj is spearheading service provision in rural areas, supported by a variety of externally assisted schemes. There is also improved supply of drinking water, both in quantity and quality, through the activities of the panchayats and village committees. There is better monitoring of drinking water supply by the Health Department, using simple devices and improved chlorination and other measures to assure better quality. These will be carried out by the male health workers who are trained for the purpose and the work will be supervised. The scarcity of water is tackled by better harvesting of rainwater and better management of surface water, bore wells and hand pumps, Fluorosis and other problems are also being tackled.

Sanitation receives greater attention in the cities, towns and villages. This includes disposal of garbage, sewage and human and industrial waste. There are more latrines but not sufficient. People are encouraged to have sanitary latrines attached to their dwelling places, instead of women having to wait until it is dark to relieve themselves in the open.

Hospital wastes are receiving greater attention, with segregation of the waste and appropriate disposal.

10. Environment

Everyone has the right and responsibility to live and work in healthy environments. Many people, especially those living in urban slums are compelled by circumstances to live in un-sanitary conditions. The situation becomes worse in rainy seasons. The slum dwellings are often below the road level and filthy water flows into the houses. Work environment particularly for the unorganised and small-scale sector is suboptimal. Housing, living and working conditions have to improve, through the efforts of all sections of society enabled by the state. Bodies set up by the state will also look at action required at state level to study and respond to broader environmental issues as depletion of the ozone layer; global warming; air, water and soil pollution; and others; all of which impact on health.

11. Nutrition

The percentage and absolute numbers of severely and moderately undernourished children will be significantly reduced, as a result of better nutrition awareness and action. Mid-term goals stated in the health policy document will be improved by a further 50% by 2020.

12. Immunisation

There are many achievements by 2020. There is better coverage of children under the Universal Immunisation Programme. Paralytic polio has been eradicated. The number of vaccine preventable diseases is reduced. However coverage is still incomplete, especially in backward districts. There are still problems of maintenance of cold chain with frequent breakdown of electric supply. There is need for dependable refrigeration system. By 2020, this basic preventive health strategy will have universal coverage with good quality.

13. Transition Stage

Karnataka is still in the epidemiological transitional stage. It still has a large share of infectious diseases, characteristic of the underdeveloped world, as well as the degenerative and other diseases of industrialised and affluent societies. The old scourges of tuberculosis and malaria continue. It is envisaged that by 2020 the burden of preventable infectious diseases will be contained keeping alert to newer and re-emerging diseases that continue to remind us of the need to address deeper underlying socio-cultural, behavioral and political economy factors. Health promotion regarding risk factors and healthier lifestyles will be actively undertaken with creativity, professionalism and broad based participation.

HIV infection has been contained to some extent; anti-retroviral drug combinations are being used against HIV infection.

14. Medical Services

Primary, Secondary and Tertiary Care Services are available through Public, Voluntary and Private Sectors. But there are problems due to commercialisation of medical care. With a middle class mindset, policy and decision makers do not see the needs of the poorest of the poor. With globalization of medical care, the cost of care has gone up. The affluent can afford the care but the very poor continue to be outside the medical care in the private sector. There is need for social security, ensuring that the poorest can get the needed medical and health care.

15. The Non-Communicable Diseases

The non-communicable diseases are on the increase. Diabetes Mellitus continues to be a serious condition. A very large number of people are affected in urban and rural areas. 8-10% of males and females of 20 to 80 years are affected. The disease leads to many complications. Management and control of blood sugar level are absolutely essential.

High blood pressure is also prevalent in a large proportion of the population. Cardio-vascular diseases are very common. Primary, secondary and tertiary prevention are necessary; changing life styles have added to the problem. The state has a large number of patients with asthma and chronic bronchitis.

16. Cancer

There is not enough community-based data on the prevalence of cancer in the State. Cancer registry data may not reflect the true cancer situation. Changes in life style, longevity and use of tobacco in various forms are some

of the important causes leading to increase in cancer. The increase in treatment centers has not been able to cope with the demands.

17. Sight for all

The number of the visually impaired continues to be high. The major cause (80%) is cataract. This is curable. It is unfortunate and unacceptable that Karnataka has not been able to cope with the need for cataract surgery (mostly intraocular lens implantation) even though we have the required trained eye surgeons and the cost of IOL has come down drastically. Other causes of impaired vision like corneal ulcers and opacities, glaucoma, refractive error, trauma and diabetic retinopathy continue. Vision 2020 works towards coverage of the backlog, with attention paid to other.

18. Substance Abuse

Alcohol consumption continues to be high, resulting in various kinds of diseases, affecting almost every organ of the body. Not enough is being done to reduce the demand or supply of alcoholic drinks and the harmful effects from their abuse.

Tobacco is another substance which has widespread harmful effects on the body, including cancer, cardiovascular diseases and other problems.

19. Indian Systems of Medicine

Not enough is being done to improve the functioning of the health care institutions belonging to the Indian Systems of Medicine. The people continue to use the systems of Ayurveda, Unani, Siddha, Homoeopathy, Yoga and Naturopathy.

Herbal medicine is very popular.

Other healing practices such as Tibetan Medicine, acupuncture, acupressure, pranic healing, Reiki, magnetotherapy and many others continue to be popular with the public.

20. Panchayat Raj

There is greater co-operation between the Panchayat Raj Institutions and Health Services. The Panchayat Raj Institution members are more aware of their responsibilities and powers. They are involved in the planning and implementation of the development programmes including health at various levels. This is making a substantial impact on the improvement of health services at the periphery.

21. Medicinal drugs

The use of drugs has become more rational. Most of the essential drugs are available at the health care institutions in the public sector. But some of the drugs, under the new patent laws are not easily available because of the increased cost. The patent laws have affected the production of some of the drugs in the country.

22. Informatics Technology

Karnataka has made vast strides in Informatics Technology and this has made its impact on Health Care. There are four main areas where informatics technology can be useful.

- Patient care (diagnostic and therapeutic decisions)
- Medical education, training and research
- Public health
- Health Systems management.

Patient care, both diagnostic and therapeutic, has benefited from telemedicine in secondary and tertiary care with cardiac monitoring and ECG evaluation via a telephone line. ECGs and sonograms are transmitted to experts and their advice obtained. It can be expected that these facilities will be extended in due course to primary health care in remote areas. Computerized ECGs, stress test equipment and scanners can be linked to computer networks and opinions of experts (situated in the cities) can be obtained.

Medical education can benefit from computer assisted instruction. Visual information (images) can be very useful. Computer animation can be added to it. MEDLARS has been helpful in promoting education, training and research in health.

Health Management Information System has been developed and has been in place for some time. It helps in better management of health care systems. Hospital Information System has also been developed. Improving the utilisation of the facilities available and bringing out lacunae and mismatches.

Public health can benefit enormously. Disease surveillance has been computerized. Early information leads to early and effective interventions and containment of disease out breaks.

The vision is promising. The need is to have a mission to achieve that vision, where there is equity, integrity and quality in health and health care.

KARNATAKA VISION 2020			
Indicators	2001 (Source / Year)		2020
Infant Mortality Rate	58 / 1000 live births	SRS 1999	25 / 1000 live births
Under -5 Mortality Rate	69 / 1000 live births	NFHS - 2	35 / 1000 live births
Crude Birth Rate	22.3 / 1000 population	SRS 1999	13 / 1000 population
Crude Death Rate	7.7 / 1000 population	SRS 1999	6.5 / 1000 population
Maternal Mortality Rate	195 / 1,00,000 live births	SRS 1998	90 / 1,00,000 live births
Life Expectancy at Birth			
Male	61.7 years	1996-2001	70.0 years
Female	65.4 years	1996-2001	75.0 years
Total Fertility Rate	2.13	NFHS - 2	1.6
Percentage of Institutional Deliveries	51.1	NFHS - 2	75
Percentage of safe deliveries	59.2	NFHS - 2	> 95
Newborns with Low Birth Weight	35 %	1994	10%
Percentage of mothers who received ANC	86.3	2000	100
Percentage of eligible couples protected	59.7	2000	70%
Percentage of children fully immunised	60	NFHS - 2	90
Anaemia among children (6 - 35 months)	70.6%	NFHS - 2	40.0%
Nutritional Status of children			
Severe under nutrition	6.2%		2.0%
Moderate under nutrition	45.4%	Gomez, 1996	25.0%
Mild under nutrition	39.0%		43.0%
Normal	9.4%		30%
Sex (Gender) ratio	964F / 1000M	2001 census	975F / 1000M
Sex (Gender) ratio, 0-6 years	949F / 1000M	2001 census	970F / 1000M

24. IMPLEMENTATION OF THE REPORT

The Task force had the unique opportunity of considering the entire health system of the State. Consequently, the recommendations of the Task Force are wide ranging and impact on almost all aspects of the health system. At first sight the recommendations may seem too many and too detailed. However, it would be evident that in the effort to cover all aspects of the health system, all issues had to be considered and inter-relationships both within this system and the links with other social and development activities had to be included. Obviously, it would be necessary while considering and implementing these recommendations to prioritize them by urgency for change, feasibility within a set time frame and need to ensure a smooth transition. The recommendations could be broadly said to consist of three types.

- Those that relate to the changes in the basic structure of the health services and involve formulation of new Cadre and Recruitment Rules and associated elements;
- Those that relate to “governance” issues such as training, morale building, transparent transfer policies; personal appraisal system, monitoring of finances, administrative and technical aspects of work; disciplinary systems; relationship with the Panchayat institutions and other elements of management;
- Those that relate to enhancement of equity, quality, integrity and coverage and building in emphasis on new elements in the health services provided. These include the elements such as expansion and addition of services, better surveillance, better access and reach of services, reduction of disparities and the like.

It must be emphasized that these are not exclusive. On the other hand, they are inter-connected since they together seek to re-engineer the health system for higher efficiency and productivity and greater equity. However, these three sets of recommendations would need special expertise appropriate to the character of the category of recommendations. Such expertise would range from administrative, financial, legal and management experience to knowledge of the professional content of both public health and medical (clinical) services. The structures for examination of the recommendations would, therefore, have to be based on these special requirements. A two-tier structure is suggested for this purpose. The first could be an **Implementation Committee**. The second would be subject matter **Sub Committees** whose reports would be considered by the Implementation Committee and, in due course, by the final decision making level in Government. It is suggested that the recommendations be considered by an official Implementation Committee (for Health Systems Reform) which could include:

Principal Secretary for Health & FW, Secretary Medical Education, Commissioner for Health, Director, KHSDP, who has been Member Secretary of the Task Force, Secretary Department of Personnel and Administrative Reforms, Director, Health & FW representative of the Finance Department and a representative of the Law Department.

The Implementation of recommendations for change is essentially the responsibility, the prerogative and the privilege of the Department of Health and Family Welfare. It is to be done in an atmosphere of freedom, innovation and creativity. The government need to provide the department with the best officers to lead and steer this important and challenging process of change, ensuring them adequate time, space and support. The Task Force has refrained from detailing implementation plans but expresses its willingness to be a sounding board in this regard, if required.

To initiate implementation of the recommendations at the earliest, a **small core group** of young energetic doctors be selected to function under the Commission for Health to study the recommendations and evolve plans. This group could function on a short-term basis. The work would be later continued by the Planning and Monitoring Division. The Core group may first process the recommendations for consideration of Government, prioritize them and set realistic time frames for implementation. Some of the recommendations can be implemented early by the Department. The attempt must be to expedite the process of implementation. Therefore, the time frame should be as short as possible.

Other experts could be co-opted for specific issues by the Implementation Committee or the Sub Committees.

The Implementation Committee would need the assistance of a small but efficient secretariat, by way of a Cell, to process the recommendations, prepare notes for the Committee and the Sub Committees and follow up all action points. It is recommended that this cell be constituted of full time officers drawn from within the Department and other connected Departments. Expertise from outside could also be inducted with advantage.

The number of such officers and experts and the supporting staff may be determined and the positions filled by selection of capable persons. This cell may be placed under the Commissioner and will function till the Planning and Monitoring Division is fully established.

The Implementation Committee could set up Sub Committees for specific aspects. Priority would have to be given to the reorganization of the health services. This would include basic issues such as setting in place through Government orders the suggested system, transition provisions, establishing the District Cadres and the procedures for allocation of existing personnel and future recruitment procedures, preparation of the separate seniority lists for the two Cadres of Public Health and Medical, determination of time scales for those who prefer to remain as doctors at the PHC level, preparation of the new Cadre and Recruitment Rules, etc. It would be useful to list out all these issues and develop a calendar of operations, with specification of the Sub Committees that would deal with each issue. It must be reiterated that the effort should be to implement the recommendations in as short a time frame as possible. If these recommendations are implemented, there would be little doubt of the future of the health services of the State in terms of efficiency and professional excellence and, most important of all, ability to serve the people of the State to their full expectations and satisfaction.

*The woods are lovely, dark and deep,
But I have promises to keep
And miles to go before I sleep,
And miles to go before I sleep.*

- Robert Frost

25. MAJOR RECOMMENDATIONS AND EXPECTED OUTCOMES

*"Our main business in life is not to see
what lies dimly at a distance
but to do what clearly lies at hand"*

- Dale Carnegie

The Task Force on Health and Family Welfare had made some short-term recommendations to improve health of the people and strengthen health care services in Karnataka, with special focus on Primary Health Care and Public Health. The Task Force is happy that these short term recommendations have found acceptance by the Government and many of them have been implemented or, are in the process of implementation. The Final Report takes cognisance of the acceptance of the short term recommendations and builds on them with the medium and long term recommendations. Implementation of these recommendations would yield good dividends by way of improved health and human – centred development.

The overall thrust of the short term recommendations had been **Equity With Quality**. These continue to be the major thrusts. During discussions with various groups and individuals, and observations in the field, another important focus became clear: **Integrity**. It deals with corruption which is widespread and must be tackled. There is increasing corruption in health services; if the newborn baby is to be seen by the mother or close relatives, a bribe has to be paid. If an operation is to be done, a bribe is demanded. It is true that there are many, many health professionals and health workers who do their work honestly. But there are others who are unethical in their practice and hold the public to ransom.

The hallowed precincts of the University and teaching institutions are not free of this lack of integrity. Bribes are demanded if a pass is to be given. Even a good student has to pay to ensure that the he/she does not fail.

But integrity goes beyond these. It deals with *failure to do one's duty*. **Non-performance** has come out as a major issue.

There have been failures of the individual and the system. There is need for improvement. Better training and overall capacity building can help in improved performance; so also, reorganisation of the services can help in the utilization of resources with better accountability.

There are a large number of recommendations given under each chapter or subchapter. These are all important. But in order to highlight the more important recommendations, they have been brought together as "Major Recommendations". We have also given the expected outcomes" against each recommendation, even though, in the majority of the recommendations, the outcomes are self-evident within the recommendations themselves.

Sl.No.	Major Recommendations	Outcome expected
	1. EQUITY IN HEALTH CARE	
1.1	<i>All policies of the Government (State and local), likely to have direct or indirect effect on health, should be governed by the principle of equitable access to effective care to meet the needs of the people; they should be formulated such that disadvantaged are addressed to reduce inequity. Monitor inequities in health based on social, economic and health care services, disaggregated with respect to age, gender, socio economic status, geographical regions and others.</i>	All people have equal opportunity to meet their health needs.
1.2	<p><i>The Health System must improve availability and access to quality health care (particularly primary health care and public health) in the underserved talukas / districts and for the poor and vulnerable population. Ensure better utilization of the primary health care services by making the facilities fully functional and people friendly and through monitoring and supervision improve the quality of service.</i></p> <p><i>The State Government and the local governments should take special steps to bring up the health status in areas where the health status is below the State average.</i></p>	Quality health care is available to the poor and the disadvantaged and in underserved areas, considering talukas and districts as the base
1.3	<i>In the large and undivided districts like Gulbarga and Belgaum the districts should be divided into two and a post of Additional DHO / DMO should be created with additional team of Programme Officers.</i>	The quality of health care will improve with better supervision.
	2. QUALITY OF HEALTH CARE	
2.1	<i>Have minimum acceptable standards worked out by independent committees for health care institutions at different levels and locations and for public health measures.</i>	Standards are worked out for health care institutions at different levels and locations and for public health measures.
2.2	<i>The Joint Directors, Medical and Public Health, will be designated as the persons in charge of Quality Assurance. The Administrative Medical Officer in charge of each hospital will be responsible for ensuring quality of care in each institution.</i>	Nodal officers and administrative medical officers assigned the responsibility for quality assurance will be held accountable.

Sl.No.	Major Recommendations	Outcome expected
	3. PRIMARY HEALTH CARE	
3.1	<i>Have the philosophy of comprehensive primary health care accepted through training and advocacy and implemented by all concerned: the people and the health services.</i>	Priority is given to comprehensive primary health care, as distinct from selective primary health care and in preference to secondary and tertiary health care.
3.2	<i>All existing vacancies of doctors, nurses, pharmacists, laboratory technicians and ANMs in the primary health centers and subcentres must be filled up immediately. Appointments made on contract basis must be regularized. Have regular appointments made based on needs for which there must be a continuous assessment and monitoring of vacancies likely to occur in the PHCs&subcentres.</i>	All posts at PHCs and subcentres are filled up promptly with qualified personnel, appointed regularly, improving service.
3.3	<i>Appoint staff nurses at all PHCs, creating posts where there are none at present.</i>	Qualified staff nurses are available regularly.
3.4	<i>All essential staff, including doctors, pharmacists, nurses and ANMs attached to the Primary Health Centres must stay at headquarters.</i>	All essential staff are available for service at all times.
3.5	<i>Have a construction and renovation programme such that every PHC will have a suitable building within the next 5 years and quarters for the essential staff within the next 10 years. In the interim period, take suitable buildings on rent for PHCs and staff quarters.</i>	Every PHC will have its own building over a time frame. Buildings will also be available for the stay of all essential staff.
3.6	<i>Consider the possibility of making available rural medical practitioners / physician assistants / nurse practitioners / nurse obstetricians available for service in the rural areas, where qualified MBBS doctors are not available.</i>	Where MBBS doctors are not available for service at PHCs, other trained practitioners are available.
3.7	<i>Have telephones at the PHCs installed without delay for better communication. Make arrangements for the speedy transport of patients to the referral centers by provision of ambulance vans or funds to hire available transport, in the case of the poor.</i>	Communication and transport are assured
3.8	<i>There is need to have fully functional laboratory services, with trained technicians.</i>	Diagnostic services are assured

Sl.No.	Major Recommendations	Outcome expected
3.9	<i>Have Village Health Committees at Gram Panchayat level. Two representatives each of the committees will be members of the PHC level co-ordination committees, which will have representatives of voluntary organisations, professional bodies and elected representatives. The Department of Health must stipulate the working hours of PHCs and subcentres to suit the community needs.</i>	Community involvement is assured at the village and PHC levels. More convenient working hours of PHCs.
3.10	<i>PHCs must have round the clock service. Make available the services of Lady Medical Officers. Progressively increase the number of lady medical officers at PHCs such that, in the course of the next 10 years, every PHC will have one male and one female medical officer.</i>	PHCs must provide round the clock service. The services of lady medical officers are assured.
3.11	<i>An appropriate referral system and linkages between PHCs and Secondary Care Institutions must be put in position to make primary health care more efficient and effective.</i>	An efficient and effective referral system is in place.
3.12	<i>Have Urban Primary Health Centres, one for 50,000 population in cities and towns, converting the existing resources such as health centers, urban family welfare centers and maternity homes. While these Urban Primary Health Centres will be the responsibility of the local body (Corporation or Municipality), technical guidance will be provided by the Directorate of Health and Family Welfare Services.</i>	Comprehensive primary health care in urban areas comes to function, administratively under the local bodies, with technical guidance from the Department of Health and Family Welfare Services
3.13	<i>Every PHC will display prominently a Charter of Rights of patients and citizen's charter.</i>	Greater transparency and better appreciation of the rights of patients are assured.
3.14	<i>Distribute the male health worker, one for each Gram Panchayat, redefining his job responsibilities. He will belong to the District Cadre. The technical control will be with a designated PHC medical officer. Or Male Health Worker could be given the responsibilities of 2 Subcentres.</i>	Better utilization of the services of male health workers with defined responsibilities.
3.15	<i>Reorganise and restructure the PHCs, PHUs and subcentres (including staffing) considering the population and area covered and accessibility.</i>	Improved functioning of PHCs, PHUs and subcentres.
3.16	<i>Provide interest free loans for the purchase of two wheelers for the transport of Medical Officer and health workers at PHCs and subcentres.</i>	Improved mobility and availability of functionaries at the first contact level.

Sl.No.	Major Recommendations	Outcome expected
	4. SECONDARY AND TERTIARY HEALTH CARE	
4.1	SECONDARY AND TERTIARY HOSPITALS	
4.1.1	<i>Make the secondary and tertiary health care institutions fully functional, with the required staff (avoiding mismatch) and equipment in good working condition. Appoint an expert committee to examine the needs of the State with respect to the specialities and their rational distribution in the districts and talukas, together with requirements of personnel, equipments, etc.</i>	The needs of the people for secondary and tertiary care are better met.
4.1.2	<i>Make the hospitals under the Indian Systems of Medicine and Homeopathy function well. Standards for these hospitals must be worked out and implemented.</i>	The hospitals under ISM&H provide quality care.
4.1.3	<i>Steps must be taken during training (in-service) programmes to inculcate the feeling of 'ownership' of the hospitals by the staff at every level, with good 'supervision' and 'facilitation'.</i>	Improved functioning of the hospitals.
4.1.4	<i>CHCs need the post of anaesthetists for the functioning of the Departments of Surgery and Obstetrics & Gynaecology</i>	Improved surgical, obstetric & gynaecological procedures.
4.1.5	<i>The equipments must be maintained in good working condition; the downtime must be reduced to the absolute minimum.</i>	Better utilization of the equipments
4.1.6	<i>The Administrative Medical Officer must be trained in Hospital Administration.</i>	Improved hospital administration; better service to the patients.
4.1.7	<i>The Secondary Care Hospital must have a social worker and a Dharmashala for the care of the patients and attendants.</i>	Improved facilities for the patients and better patient satisfaction.
4.2	EMERGENCY HEALTH SERVICES	
4.2.1	<i>Develop Emergency Medicine and Trauma Care Centres to provide comprehensive medical care, including medical, surgical, obstetric, paediatric and trauma care. To start with there will be 44 such centers developed by the Karnataka Health Systems Development Project. This will be expanded gradually to include more hospitals, spread throughout the State. Each center will have 10 beds for emergency medicine and trauma care. The Centres will have trained personnel, all necessary equipment and furniture.</i>	Improved emergency care, reducing death, disease and disability.

Sl.No.	Major Recommendations	Outcome expected
4.2.2	<i>A good and working communication system will be developed. This will include telephone facilities and wireless sets. Well-equipped ambulance services with trained personnel will be provided. The help of the police will be taken to ensure early and easy communications. A system of community insurance will be developed.</i>	All available delay is removed. Patients get the best possible care at the earliest.
4.2.3	<i>Helmet wearing should be made compulsory for two wheeler users (including pillion riders). Seat belts should be worn while driving cars. First aid training should be mandatory to drivers and conductors of buses, trucks and other vehicles. These vehicles will carry functional first aid boxes.</i>	Improved safety on the roads.
4.2.4	<i>The Additional Director, (Medical) will be the Chief Nodal Officer for coordinating all work with respect to Emergency Medicine and Trauma Care.</i>	A designated person is given the responsibility for co-ordination.
4.3	DIAGNOSTIC SERVICES	
4.3.1	<i>The Public Health Institute must be redesigned and strengthened to encompass Epidemiology and laboratory components. This State Level Laboratory should have expertise in Bacteriology, Virology, Mycology, Parasitology, Medical Entomology and Toxicology. Its functions include Supervision, Training, Quality Management, Reagent preparation and Standardisation.</i>	A State level laboratory with necessary expertise and facilities is available.
4.3.2	<i>The District Hospital Laboratory and the District Health Laboratory will be integrated; the District Laboratory will fulfill both functions – diagnostic service for health care, and for public health. The District Laboratory should be supervised by one MD / DCP (Microbiology) and MD / MSc (Biochemistry) and one MD / DCP (Pathology), and adequate respective staff, technical and administrative. The Taluk Hospital Laboratory should be supervised by one specialist of DCP qualification, supported by other staff. CHC and PHC laboratories will be managed by Trained Technicians.</i>	District, Taluka and PHC level laboratories are provided.
4.3.3	<i>Imaging and miscellaneous investigative services will be provided to meet the requirements for diagnostic tests at various levels.</i>	Imaging and other diagnostic services are available according to needs and feasibility.

Sl.No.	Major Recommendations	Outcome expected
4.4	BLOOD BANKING AND TRANSFUSION SERVICES	
4.4.1	<i>All blood banks should have the required equipment, and be supplied with adequate reagents and testing kits in a timely manner. They should have adequate number of trained staff. All blood banks should put in place a quality assurance programme.</i>	All blood banks are of the required standards and quality.
4.4.2	<i>A comprehensive plan to motivate and mobilize voluntary and relative blood donors to ensure adequate supply of safe blood throughout the year and all over the state should be developed with their help.</i>	Availability of safe blood is assured
4.4.3	<i>The medical community should be sensitized to make optimal & rational use of blood. Every hospital should have a blood transfusion committee to ensure this.</i>	Optimum use is made of the blood.
4.4.4	<i>A pilot project to study the logistics, management and monitoring of the centralized 3-tier system comprising – “Blood Component Center- blood collection -blood storage & issue points” should be initiated in Bangalore; and this model replicated later in other major cities, if found feasible.</i>	Information on management of the blood banking system becomes available.
4.4.5	<i>An adequate number of well-equipped (Whole Blood) blood banks will have to be set up, keeping the blood needs and regional disparities in mind.</i>	A system is in place to provide for the requirement of blood throughout the State.
4.5	BIO-SAFETY	
4.5.1	<i>Radiation Protection programmes must be strictly followed by the X-ray equipment users.</i>	Health professionals and patients will be protected from radiation hazards.
4.5.2	<i>Adequate consumables for barrier protection like aprons, masks and gloves should be provided to staff.</i> <i>All health care workers who are at potential risk for infections which may be transmitted through blood and body fluids should be immunized against Hepatitis B.</i>	Health professionals and patients will be protected from nosocomial infections.
	5. PUBLIC HEALTH	
5.1	PUBLIC HEALTH AND PRIMARY HEALTH CARE-A SYNERGY	
5.1.1	<i>All the staff of the Department of Health and Family Welfare Services must appreciate the importance of Public Health and the synergy between primary health care and public health.</i>	Public Health is given due importance.

Sl.No.	Major Recommendations	Outcome expected
5.2	WATER AND SANITATION	
	<i>While other departments are responsible for storage, treatment and distribution of water, the department of health, has specific responsibilities for monitoring quality.</i>	
5.2.1	<i>Set standards for water quality and ensure regular testing to ensure that they are maintained. This information should be made available to the public.</i>	Standards are set for quality of water and periodically monitored.
5.2.2	<i>Undertake, supervise and be responsible for water purification treatment e.g. chlorination of wells in rural areas by junior health assistants in collaboration with the panchayats / local bodies. Undertake periodic testing for microbial contamination. New water sources will need an initial detailed testing for chemical contamination.</i>	Junior health assistants carry out periodical testing, chlorination and other measures.
5.2.3	<i>Undertake surveillance and notification of the concerned authorities regarding early outbreaks of waterborne diseases, as part of the disease surveillance system. Initiate rapid action in suspected outbreaks.</i>	Waterborne diseases are controlled.
5.2.4	<i>Integrate health promotion activities concerning water and sanitation related problems at all levels - through schools, panchayats, women's sanghas, the print and audio visual mass media and folk culture groups. The linkage between health status and water supply, sanitation and drainage needs to be highlighted. Positive messages regarding personal hygiene practices, environmental hygiene and how to utilise government schemes.</i>	Health promotion activities with respect to water and sanitation.
5.2.5	<i>Ensure availability of toilets in schools and public places and in individual households.</i>	Improved sanitation, with decrease in water borne diseases.
5.3	POLLUTION AND WASTE MANAGEMENT	
5.3.1	General Waste Management: <ul style="list-style-type: none"> - Set up a working group to look at the recommendations of the Supreme Court Committee for management of solid waste in Class I cities and draw up an Action Plan for implementation in Karnataka. - Learn from experiences in Bangalore regarding primary (door-to-door) collection of garbage and expand it to the other cities and towns. - Accelerate the process of identifying and utilising the Landfill sites. - Delineate the elements of an Integrated Waste Manage- 	A policy for waste management becomes available and action taken to dispose off solid waste.

Sl.No.	Major Recommendations	Outcome expected
	<p>ment Policy at the State Level.</p> <ul style="list-style-type: none"> - Identify mechanisms for improving the functioning of the local self-governments with regard to Solid Waste handling (Financial and Technical expertise including). - The government should provide certain common facilities like collection & transport, incineration, sanitary landfill sites etc., for all Towns and Cities and support private initiatives for common waste management facilities including recycling units. 	
5.3.2	<p>Hazardous Waste</p> <ul style="list-style-type: none"> - Steps to be taken to publicise and bring in greater transparency in the functioning of the State Pollution Control Board including the punitive measures taken against the polluting industries. - Set up the working group to examine the existing provisions of the Environment related acts (Water Act, Air Act and Environment Protection Act) and the impact of the 73rd and 74th Amendment to the Constitution of India (Nagarapalika and Panchayath Raj Acts). - Regulate the use of Plastics including the implementation of the ban on plastics less than 20 microns thick. - Steps to be initiated to regulate the use of Mercury and other heavy metals in industries. 	Pollution of the environment reduced.
5.3.3	<p>Natural Resources depletion and Pollution abatement:</p> <ul style="list-style-type: none"> - Study the recommendations of the Eco-committee report under the chairmanship of Sri A N Yellapa Reddy and draw up of an Action Plan for implementation. - Health Impact Assessment to be made mandatory along with Environment Impact Assessment for developmental projects. <p>Initiate steps to address the abatement of indoor air pollution within households (efficient and effective use of firewood and other fossil fuels; popularising the use of LPG).</p>	Reduction in pollution. Development projects are cleared after considering their impact on health.
5.3.4	<p>Bio-Medical Waste</p> <ul style="list-style-type: none"> - The Andhra Pradesh experience (Task Force for independent monitoring and reporting), and Tamilnadu experience (Development of Model centres in each district) towards development of systems for safe management of health care waste to be studied and appropriately incorporated into the working of the Advisory committee to the Appropriate Authority on Bio-medical Waste Rules in Karnataka. 	Bio-medical waste disposal is improved after learning from our own and neighbouring States experiences. Health care personnel are trained in proper separation and disposal of waste.

Sl.No.	Major Recommendations	Outcome expected
	<ul style="list-style-type: none"> - The waste management initiatives at the KHSDP Hospitals should be strengthened and extended to all health care institutions. - Ensure proper segregation of waste and total waste management at all health care institutions. The segregated waste streams should not get mixed up with general solid waste. <p>The segregated waste should be disinfected; sharps should be destroyed / disfigured and plastics shredded before final disposal through discharge into sewage systems, land-fills etc. Recyclable material should be sent for recycling.</p> <p>Ensure training of Health Care Personnel for proper waste management practices.</p>	
5.4	COMMUNICABLE DISEASES	
5.4.1	VECTOR-BORNE INFECTIOUS DISEASES	
5.4.1.1	<i>Establish programmes for control of all vector borne diseases, including Malaria, Filariasis, Japanese Encephalitis and Dengue fever / Dengue Haemorrhagic Fever and Dengue Shock Syndrom, and KFD. Emphasise bio-environmental methods of control.</i>	Control of vector borne diseases.
5.4.1.2	<i>Establish a District Level Disease Surveillance System and a State Level Diagnostic and Reference Laboratory for mosquito borne infections and other communicable diseases of public health importance.</i>	Control of communicable diseases
5.4.1.3	<p>Kyasanur Forest Disease</p> <p><i>Strengthen the existing disease surveillance system for Kyasanur Forest Disease with every case of human infection or monkey death being reported and investigated.</i></p>	Early detection of outbreak of KFD.
5.4.1.4	<i>Vaccination of the population at risk. Production of adequate quantities of KFD vaccine must be ensured as also timely supply through cold chain.</i>	Prevention of KFD.
5.4.1.5	<i>The latest method for diagnosis like ELISA test should be introduced for quick and correct diagnosis.</i>	Improved and early diagnosis.
5.4.2	TUBERCULOSIS	
5.4.2.1	<i>The quality of implementation of the Tuberculosis control programme in all districts, including urban areas, under both the National Tuberculosis Programme (NTP) and</i>	Improved diagnosis and care.

Sl.No.	Major Recommendations	Outcome expected
	<p><i>the RNTCP needs to improve within the next year. All staff involved will need to be held accountable for performance. The primary health centres should provide access to good quality TB care for all, and should have</i></p> <ul style="list-style-type: none"> <i>- laboratory technicians, whose skills are updated and whose slides are cross checked regularly;</i> <i>- microscope, stains, all records and registers;</i> <i>- uninterrupted drug supplies;</i> <i>- medical officers are trained by the District TB officers regarding the organisation and functioning of the NTP/RNTCP;</i> <i>- close supportive supervision from the taluk health officer and DTC in particular with problem solving in the field.</i> 	
5.4.2.2	<p><i>The District TB Centre should have a qualified person in public health or with a diploma in TB and chest diseases. DTOs should undergo the training at National Tuberculosis Institute (NTI). Two medical officers are required at the DTC – one to run the clinical service and the other to undertake training in the field and to analyse reports etc. The DTC is the referral centre for all aspects of the NTP/RNTCP and should undertake orientation and training of institutions and General Practitioners in the private, voluntary and public sector regarding the programme. A medical college department cannot replace the DTC.</i></p>	<p><i>The District TB Centre becomes functional and effective.</i></p>
5.4.2.3	<p><i>The state should work towards</i></p> <ul style="list-style-type: none"> <i>- Increased case detection to 75% of expected cases. This will include cases detected by the public, private and voluntary sector for which a system of notification may be required. The expected number of cases may also have to be recalculated based on recent epidemiological data. Targets should not be used.</i> <i>- Early case detection, with emphasis on sputum microscopy for diagnosis. The use of x-rays should be rationalised to reduce over diagnosis and unnecessary treatment. There should be an acceptable ratio between sputum positive and sputum negative cases (1:1).</i> <i>- Completion of treatment with cure rates (measurable in sputum positives) of at least 85%. Two drug regimes should be discontinued.</i> 	<p><i>Improved case detection and completion of treatment.</i></p>

Sl.No.	Major Recommendations	Outcome expected
	<ul style="list-style-type: none"> • Recording, reporting and analysis at DTC level to be used for monitoring and planning the programme. • Paediatric dosage forms of drugs to be made available. Anganwadis could be centres for follow-up of young children with TB. • Supervised or directly observed therapy to be used only when necessary. Active involvement of patients and their families in the treatment process with adequate patient education. 	
5.4.2.4	<i>The State TB Centre to be a model centre that is also used for training and operational research, including social science research into patients and peoples' perspectives. Networking and training with NGOs and the private sector to be facilitated by this unit along with the Karnataka State TB Association.</i>	The State TB centre conducts training & research.
5.4.2.5	<i>The state should make greater use of the services and advice of the National TB Institute.</i>	Services of NTI used better.
5.4.2.6	<i>Given the co-infection of HIV and TB, training for physicians and health personnel regarding specifics of presentation, access to treatment, developing working links with the Karnataka State AIDS Society.</i>	Health personnel trained for tackling co-infection.
5.4.2.7	<i>The State TB Society should include professionals and NGOs and regularly (annually) review the implementation of the programme.</i>	More effective functioning of the State TB Society.
5.4.3	VACCINE PREVENTABLE DISEASES	
5.4.3.1	<i>Review periodically the Immunisation Policies and Practices with the help of experts. Establish Disease Surveillance System to measure the outcome of the Universal Immunisation Programme. Any occurrence of vaccine-preventable disease, especially in a cluster of two or more cases, must immediately attract public health attention, and improve vaccination coverage locally</i>	Improved planning, monitoring and evaluation of the Universal Immunisation Programme
5.4.3.2	<i>Include Hepatitis B vaccine, under Universal Immunisation Programme for the immunisation of children.</i>	Protection of children from Hepatitis B infection.
5.4.3.3	<i>Production of vaccine in the State to be modernized using the latest technology, under guidance of a Technical Steering Committee for a) Kyasanur Forest Disease b) Cell Culture Anti Rabies vaccine and vaccines against typhoid, Japanese Encephalitis and other vaccine preventable diseases in collaboration with the Department of Animal Husbandary.</i>	Self-reliant, efficient and effective vaccine manufacture system will be established in the state.

Sl.No.	Major Recommendations	Outcome expected
5.4.3.4	<i>Maintenance of cold chain and utilising it for all drugs and vaccines that require cold chain.</i>	Better coverage and effectiveness of the Immunisation Programme.
5.4.4	FOOD AND WATER BORNE DISEASES	
5.4.4.1	<i>The Health System must establish a functional disease surveillance system and develop epidemiological, microbiological and chemical analysis and expertise and facilities for early outbreak control.</i>	Early control of food and water borne epidemic out breaks.
5.4.4.2	<i>The health system must establish routine periodic monitoring of water for coliforms and chlorine content. Each local area health authority must develop its own plan of action to monitor water quality. At any point when coliform is found in supplied water, that information must be immediately made available to the local government, the water supply agency and also to the public (consumers). Health System will also provide technical advice for correcting the deficiencies and to monitor progress.</i>	Provision of safe, adequate and acceptable drinking water to the public.
5.4.4.3	<i>The Health Department must review and revise the regulations and legislative measures governing food safety. Regulations must include all food serving facilities including street vending. They must check and prevent adulteration and contamination of foods at various stages of production, processing, storage, transport and distribution..</i>	Enhanced food safety.
5.4.4.4	<i>The Health Department should develop guidelines for the health check-up and immunisation of food handlers against typhoid fever and hepatitis A. Control measures recommended include, training and certification of food handlers in restaurants, hostels, hotels etc.</i>	Enhanced food safety.
5.4.5	HIV / AIDS, REPRODUCTIVE TRACT INFECTIONS & SEXUALLY TRANSMITTED INFECTIONS	
5.4.5.1	<i>Prevention: Health education especially targeting adolescents, women's groups etc. -The 'men make a difference' campaign, attempting to make men more responsible in the control of the epidemic. The male and female health workers should promote condom use as an infection preventive measure in addition to their use for spacing of pregnancies.</i>	Prevention of sexually transmitted diseases.

Sl.No.	Major Recommendations	Outcome expected
5.4.5.2	<i>STD services: Laboratory diagnosis and treatment of STI/RTI from PHC upwards. HIV diagnostic facilities in each of the 27 districts to run as Voluntary Testing Centres with counsellors and social workers. Training of Medical Personnel on counseling of the STD / HIV patients as well as their sexual partners.</i>	Improved diagnostic and treatment facilities
5.4.5.3	<i>Early diagnosis and treatment of Opportunistic Infections. Treatment and admission should be possible at all district hospitals. Provision of ethical and effective antiretroviral therapies – antenatal, Post-Exposure-Prophylaxis & for HIV infected. The state/country could use provisions under WTO for indigenous production, which would lower costs.</i>	Treatment of HIV and opportunistic infections.
5.4.5.4	<i>A multi-tier system of networked continuum of care, modeled on the Bangalore experience of NIMHANS, Bowring Hospital, NGO-network based day care & hospice care and home based care, including use of herbal medicine and other systems of healing with back-up support from referral hospitals.</i>	Continuum of care.
5.4.5.5	<i>Capacity building within the Health & Family Welfare Departments including training, Public-Private partnership etc. to effect prevention, treatment and continued management of sexually transmitted diseases should be undertaken.</i>	Improvement in the management of sexually transmitted diseases.
5.4.6.	LEPROSY	
5.4.6.1	<i>The Department of Health should maintain the expertise and skills developed and sustained over the years in the detection and management of leprosy even after integration of leprosy into primary health care.</i>	Expertise and skills retained.
5.4.6.2	<i>The Leprosy incidence must be closely monitored so that under-diagnosis, if any, due to the integration with the primary health care system, may be identified and rectified without losing ground.</i>	There is a view that incidence continues. Care can be exercised by monitoring.
5.4.6.3	<i>Rehabilitation of leprosy cured persons with disability to be taken up seriously.</i>	Leprosy cured persons with disabilities rehabilitated.
5.4.7	RABIES	
5.4.7.1	<i>The responsibility of dogs on the streets belongs on the legally correct agency. The health authority should im-</i>	Intersectoral collaboration for prevention of rabies.

Sl.No.	Major Recommendations	Outcome expected
	<i>diately call a meeting of the relevant agencies: those who manage roads, veterinarians, health personnel, local administration, Vaccine Institute, SPCA, animal activist lobbies, ministry of environment etc. and prepare a comprehensive action plan, within 6 months, defining responsibilities. The plan of action must be put to action, which should include education of the public on rabies.</i>	
5.4.7.2	<i>Decision to discontinue the use of animal brain rabies vaccine, and to replace with a cell culture vaccine. Design the transition from animal brain ARV to cell culture ARV. Evolve a method to give cell culture vaccine at no payment to poor people but leave the private sector patients to purchase it. The price of cell culture vaccine may come down drastically, if bulk orders are placed. Explore manufacturing of cell culture vaccine.</i>	Availability of cell culture vaccine, with much less complications.
5.4.7.3	<i>Continuing Medical Education for correct management of animal bites to all registered practitioners / hospitals, and other personnel. State Institute of Health & FW to be in charge. Material to be professionally prepared.</i>	Improved management of animal bites.
	5.4.8 OTHER INFECTIOUS DISEASES	
5.4.8.1	<i>Active search to be conducted in the erstwhile endemic districts with Guinea worm disease, to ensure its complete elimination, and the result to be reported in the 2000-2001 Annual Report of the Department of H&FW.</i>	Complete elimination of Guinea worm diseases.
5.4.8.2	<i>The expanded laboratory in the Public Health System, at the State level, must develop expertise in the microbiology of the following diseases and develop training, reagents and standardisation of laboratory test for the District Laboratories; Leptospirosis, Brucellosis, Anthrax, Plague.</i>	Control of Leptospirosis, Brucellosis, Anthrax and Plague.
5.4.8.3	<i>After a disease surveillance system is established, a laboratory based information system must be developed in order to pool and collate laboratory generated information in infectious and parasite diseases. This will give the geographic prevalence of specific infectious diseases so that intervention can be designed and applied.</i>	Control of infectious diseases.
5.4.8.4	<i>A mechanism to coordinate public health activities between the Departments of Animal Husbandry and Health and Family Welfare must be created. Such a mechanism</i>	Co-ordination of Animal Husbandry and Health Departments to prevent infectious diseases.

Sl.No.	Major Recommendations	Outcome expected
	<i>will help in epidemiological investigations, development of laboratory skills, vaccine manufacture and development, health education, and preventive intervention.</i>	
5.4.8.5	<i>It is recommended that all primary health centres and even sub-centres are provided with simple drugs to treat skin infections.</i>	All essential drugs are available
5.4.8.6	<i>Provision of antibiotics at PHCs and referral facilities for other interventions at taluk hospital level. Audiometry at least at district hospital level.</i>	Impairment of hearing prevented.
5.5	DISEASE SURVEILLANCE	
5.5.1	<i>An epidemiological disease surveillance system to be initiated in two districts in 2001 and then progressively expanded to cover the entire state over a period of two years. The purpose of the system is for public health action.</i>	Disease Surveillance System in place.
5.5.2	<i>The State Public Health Institute (PHI) will be adequately staffed and equipped with the State and District public health laboratories reporting to it.</i>	The State Public Health Institute is fully functional.
5.6	NON-COMMUNICABLE DISEASES	
5.6.1.	DIABETES MELLITUS	
5.6.1.1	<i>Epidemiological surveys may be undertaken in rural, and urban areas to understand the "burden" of Diabetes Mellitus and for proper planning for control and prevention of Diabetes Mellitus. The help of specialist association / NGO's may be sought. The survey may be confined to the age group between 20-90 using fasting blood sugar level above 126mg/dl as the criterion using the glucometer. (The survey of hypertension, coronary artery disease and stroke may be undertaken along with diabetic survey).</i>	Better planning for control and prevention of diabetes mellitus.
5.6.1.2	<i>Laboratory facilities: It is essential to provide minimum necessary facilities to diagnose Diabetes mellitus even at PHC level. This includes, a colorimeter, glucostrips or Benedict's solution. (The calorimeter may also be used for estimating Blood Urea & Creatinine).</i>	Improved diagnosis of diabetes mellitus.
5.6.1.3	<i>Constant supply of essential drugs like insulins and oral hypoglycemic compounds are necessary. The conventional insulin may be used instead of costly ones like purified / Human Insulins except in certain special circumstances.</i>	Essential drugs and available.

Sl.No.	Major Recommendations	Outcome expected
5.6.1.4	Continuing Medical Education (CME) & other training programmes: Doctors / nurses and technicians must be exposed to CME programmes regarding the early detection, treatment and preventive measures. The course may be of 3-5 days duration.	The capacities of health personnel in the management of diabetes mellitus improved.
5.6.1.5	Referral System: Most of the patients can be treated at PHC level itself and occasionally patients need to be transferred to the CHC / Taluka hospital for specialist opinion and treatment. The patients with emergencies like Diabetic Coma and gangrene should be transferred to the higher level of care. Other patients with chronic complications may be referred or specialist's visits may be organised at PHC's on regular basis. Some guidelines may be formed for referral / treatment.	Patients are managed at appropriate levels.
5.6.1.6	Health Education: The health education is promoted with regard to the early symptoms and complications especially foot care and diet; prevention of disease & its complications. There is a need for orientation course for health workers / IEC staff regarding various aspects of Diabetes mellitus with special emphasis on diet, exercise and foot care.	Better awareness of the disease leading to action.
5.6.1.7	Develop "District Diabetes Control Programme". One Specialist for all non communicable diseases at the district may be designated for supervision, detection, drug supply and health education programme.	There is a designated Officer and a district programme.
5.6.2.	CARDIOVASCULAR DISEASES CORONARY ARTERY DISEASE (CAD)	
5.6.2.1	Epidemiological sample survey regarding the risk factors may be conducted especially for diabetes mellitus, high blood pressure, positive family history and smoking which will help in prevention strategies. Preventive measures may be initiated now itself based on available data. Health education programmes to be strengthened to reduce risk factors.	Prevention of coronary artery disease.
5.6.2.2.	Case detection and emergency management of ischaemic heart disease, to be done at PHC / general practitioner's level. The person has to be transported to CHC / Taluka Level Hospital for confirmation of diagnosis and further management.	Management of ischaemic heart disease.

Sl.No.	Major Recommendations	Outcome expected
5.6.2.3	<i>The essential drugs like Nitroglycerine tablets, Pethidine, Morphine, parenteral diuretics, oxygen etc must always be available. Well-equipped Ambulance services to shift the patient to referral centres should be available.</i>	Improved patient management.
	HYPERTENSION	
5.6.2.4	<i>There is need for multiple sample surveys to be conducted, to have some idea of the "burden" of the disease, for proper planning of our strategy for the management of hypertension. There is need to take co-operation of NGO's and specialist organisations. Estimation of blood pressure must be a part of routine examination by the doctor.</i>	Better management of persons with hypertension.
5.6.2.5	<i>Facilities: ensure availability of well maintained standard mercury sphygmomanometer with standard cuff in all centres. For investigations like ECG and chest X-ray the cases may be referred.</i>	Improved facilities for diagnosis.
5.6.2.6	<i>Constant supply of antihypertensive drugs must be maintained. Less expensive drugs with minimum frequency of dosage are preferred which increases the patient's compliance.</i>	Improved availability of essential drugs.
5.6.2.7	<i>Health education programmes are very essential for both primary and secondary prevention. Special stress on control of smoking, restriction of salt, saturated fat intake and reduction of weight has to be laid.</i>	Health promotion, avoiding risk factors.
	RHEUMATIC FEVER / HEART DISEASES	
5.6.2.8	<i>Rheumatic fever may be detected at PHC level and treated. Benzathine Pencillin should be supplied to PHC's for Rheumatic fever prophylaxis programme. (It is advisable to give penicillin upto 25yrs).</i>	Detection and management of rheumatic fever at PHC.
5.6.2.9	<i>Patients with Rheumatic Heart Disease are referred to specialist / tertiary care hospital for special investigations, surgery and other interventions.</i>	Patient with rheumatic heart disease gets specialist treatment.
	THROMBO ANGITIS OBLITERANS (BERGER'S DISEASE)	
5.6.2.10	<i>Discourage use of tobacco (a definite measure to prevent disease).</i>	Prevention of thrombo-angitis obliterans.

Sl.No.	Major Recommendations	Outcome expected
5.6.3	CHRONIC BRONCHITIS and ASTHMA	
5.6.3.1	<i>Every health centre / practitioner must have the drugs and facilities always available to treat asthmatics. Drug supply should include injections of Deriphylline, Aminophylline, Adrenaline, Steroids and tablets of Salbutamol, terbutaline. It is desirable to supply pressurised aerosol nebuliser in every health centre, so that an acute attack may be relieved, even at subcentre levels.</i>	Availability of essential drugs assured to manage patients with asthma.
5.6.3.2	<i>Preventive measures and health education may be addressed individually. Lowering environmental / industrial pollution should be taken up as a part of wider health issues. Preventive measures, health education regarding smoking and control of air pollution are important from individual / community angle.</i>	Reduction in attacks of asthma
5.6.4	CANCER	
5.6.4.1	<p>Primary prevention</p> <ul style="list-style-type: none"> - Health promotion programmes in schools and colleges to reduce use of tobacco and intensive anti-tobacco campaigns by doctors, nurses, paramedicals, teachers, social worker and anganwadi workers and voluntary organisations - Orientation programmes in the problems of tobacco use for all people's representatives and other decision makers. <p><i>Legislation to reduce tobacco use</i></p>	Prevention of use of tobacco
5.6.4.2	Secondary prevention: <i>Have cancer detection camps with the help of voluntary organisations to create awareness and detect cancers at early stage and have cancer detection units in hospitals</i>	Early detection of cancer.
5.6.4.3	Tertiary prevention: <i>Have multidisciplinary treatment facilities at Kidwai and other identified centers: surgical, medical, radiation oncology and supportive systems</i>	Effective treatment of cancer patients.
5.6.4.4	Palliative care for terminally ill cancer patients.	Palliative care
5.6.4.5	<i>Have a District Cancer Control Programme, consisting of a field unit and a clinical team, with staff trained at Kidwai Memorial Institute of Oncology and located at the District Hospital. Extend the programme to all the districts in phased manner.</i>	Early detection of cancer and management

Sl.No.	Major Recommendations	Outcome expected
5.6.5	OTHER NON-COMMUNICABLE DISEASES	Fluoride poisoning controlled.
5.6.5.1	FLUROSIS	
5.6.5.1.1	<i>Make available alternate drinking water with less than 1ppm of fluoride to people living in areas where the fluoride content is more than 1ppm.</i>	
5.6.5.2	HANDIGODU DISEASE	
5.6.5.2.1	<i>Vacancies at the Handigodu Disease Unit at Sagar Hospital to be filled up and made fully functional along with the mobile unit. Disease surveillance system should be introduced for Handigodu Syndrome.</i>	All vacancies are filled up resulting in improved quality of care. A special component of the Disease Surveillance System.
5.6.5.2.2	<i>Genetic counseling regarding marriage, child bearing, risk estimates on the basis of pedigree analysis.</i>	Prevention of the disease.
5.6.5.2.3	<i>Early diagnosis (By X-ray), treatment, surgical correction and rehabilitation should be provided to all the affected including those in Chikkamagalur district. Patients with Handigodu Disease should be provided with supplementary calcium in dietary and tablet forms.</i>	Handigodu patients rehabilitated.
5.7	ORAL HEALTH	
5.7.1	<i>Have oral (dental) health promotion activity at every level of health care and as part of the school health programme.</i>	Improved oral (dental) health
5.7.2	<i>All vacancies of dental health officers to be filled up by suitably qualified persons. All dental clinics should have the necessary equipments and facilities, which should be maintained in good working condition</i>	Improved facilities at all dental clinics.
5.7.3	<i>A designated post of Deputy Director to be in charge of Dental Health Services and Dental Education, at the Directorate.</i>	A designated officer at the Directorate made responsible for oral (dental) health.
5.8	OCCUPATIONAL HEALTH	
5.8.1	<i>The use of pesticides must be reduced to the minimum. Only such insecticides as are found to be not harmful within the recommended dosage should be allowed to be manufactured / imported and used. The cumulative effects should be considered. Monitor continuously the effect of the use of pesticide. If found harmful, withdraw it.</i>	Harmful insecticides eliminated.

Sl.No.	Major Recommendations	Outcome expected
5.8.2	<i>Ensure pre-employment and periodical health check-ups of all workers.</i>	Detect occupational health problems at the earliest.
5.9	CONTROL OF BLINDNESS	
5.9.1	<i>Strengthen the State Ophthalmic Cell, filling up vacancies, and long term continuity of Joint Director.</i>	Improved activities of the State Ophthalmic Cell.
5.9.2	<i>Ensure accountability of the ophthalmologist and ophthalmic units.</i>	Improved performance.
5.9.3	<i>Integrate school eye screening with the health check-up of school children</i>	Improved eye check up.
5.9.4	<i>All Medical Colleges Eye Departments should take up in-reach base hospital programme</i>	Better blindness control.
5.9.5	<i>All taluk hospitals (upgraded by KHSDP) should be made base hospitals for conventional cataract surgery and be allotted a fixed geographical area. All districts should have at least two Government base hospitals where IOL surgery is available. The District Medical Officer should co-ordinate and depute the available surgical manpower to fixed surgical centers on the operation days in the districts.</i>	Increased number of cataract surgeries.
5.9.6	<i>Screening in the community by the health worker to identify and refer persons at risk of developing glaucoma to ophthalmologist for evaluation and management.</i>	Improved early management of glaucoma.
5.9.7	<i>Prevention, early diagnosis and intervention in persons liable for corneal opacities causing blindness.</i>	Better management of corneal opacities.
5.9.8	<i>Establish speciality clinics: glaucoma, vitreo-retinal and corneal grafting centre, one each for each region.</i>	Improved management of eye problems.
	5.10 TOBACCO CONTROL	
5.10.1	BAN OF TOBACCO CONSUMPTION: <i>Complete ban on smoking in public places such as: a. Hospitals and all other health care facilities and Educational Institutions (Schools, Colleges, University). b. Transport facilities, including Air travel (domestic), Buses and Trains: Separation of smoking and non-smoking compartments. c. Waiting areas: Airports and Hotel lobbies (Segregation) of smoking areas from non-smoking areas. d. Theaters / Cinemas and Restaurants</i>	Smoking is reduced including passive smoking

Sl.No.	Major Recommendations	Outcome expected
	<p><i>e. Sports arenas.</i></p> <p><i>f. Museums, libraries and closed areas of Tourist Interest:</i></p> <p><i>g. Work site (segregated area for smoker at recreational / eating facilities).</i></p>	
5.10.2	BAN ON TOBACCO SALE: <i>Ban on sale of tobacco and tobacco containing products to minors (below 18 years of age) and in the immediate vicinity of educational institutions</i>	Tobacco use by children and adolescents is reduced.
5.10.3	<p>BAN ON TOBACCO ADVERTISEMENT / PROMOTION: <i>All hoarding / poster advertisement to be banned, including in / on all transport facilities.</i></p> <p><i>Radio and Television ban on tobacco advertising should be continued.</i></p> <p><i>Advertisement in Cinema halls / Videocassettes / audio and in print media.</i></p> <p><i>Point of sale advertising should be prohibited. Warning symbols and health warning should be prominently displayed at the point of sale.</i></p> <p><i>Ban on all forms of sports and arts sponsorships or linkage with sports goods / accessories should be effected. This ban should apply to all tobacco products and to other products with the same brand name. Indirect sponsorship through setting up of trusts, etc., should be banned</i></p> <p><i>All promotional activities for any tobacco product such as free distribution, mailings, discount offer etc., should be banned</i></p>	Demand for tobacco products is reduced.
5.10.4	<p>STATUTORY WARNING ON PACKAGING / NICOTINE AND TAR CONTENT:</p> <p><i>Notification of nicotine and tar content on all packages of the cigarettes and beedies and all products with tobacco should be made compulsory. Size of the statutory warning should be as large (in letter size) as the brand name and in the local (regional) language</i></p>	Demand for and use of tobacco is reduced.
5.10.5	<i>Nicotine and tar content of cigarettes should be progressively reduced, in a specified time frame.</i>	Adverse effects reduced.
5.10.6	TAXATION: <i>Taxes on all tobacco products should be increased. A specified percentage of the tax revenue from tobacco should be set aside for health education on tobacco related diseases.</i>	Demand for and use of tobacco is reduced.

Sl.No.	Major Recommendations	Outcome expected
5.10.7	INCENTIVES: <i>Farmers who change over from tobacco to alternate crops should be provided monetary and other incentives for three years.</i>	Availability of tobacco is reduced.
5.10.8	<i>Promote diversification of tobacco industry into other industries such as information technology.</i>	Availability of tobacco products reduced.
5.10.9	ENVIRONMENTAL LEGISLATION:	
	<i>Environmental legislation to provide for a targeted compulsory compensatory reforestation programme by tobacco producers and industry to make up for a tobacco curing related deforestation. A specific tax may be levied for this purpose.</i>	Deforestation is reduced.
5.10.10	MISCELLANEOUS: <i>Improve working condition of beedi workers. Industry must provide for medical care of the workers. Have alternate employment for beedi workers and labourers now working in tobacco growing, curing, etc.,</i>	Improvement of health of the workers.
5.10.11	<i>Investment of public sector funds in the tobacco industry must be stopped.</i>	No encouragement to tobacco industry.
5.11	ALCOHOL AND HEALTH	
5.11.1	<i>Training of all Medical Officers and especially at the Primary Health Care level on screening the patient for alcohol abuse problem with a simple questionnaire, early detection and interventions for alcohol-related health problems. The training should include sensitization regarding association of alcohol use with violence in the family, and association with STDs & HIV/AIDS.</i>	Medical officers are skilled in the detection and interventions for alcohol related problems.
5.11.2	<i>Referral centres for treatment of alcoholism should be identified or set up at district levels. The treatment programme should include detoxification, treatment of withdrawal symptoms, psychological therapy and long-term relapse-prevention programmes to ensure abstinence</i>	Alcoholism is managed effectively.
5.11.3	<i>Referral to local self-help groups like Alcoholics Anonymous should be encouraged as part of the relapse prevention programmes for treatment of alcoholism.</i>	Alcoholism is reduced.
5.11.4	<i>The model of "camp-approach" for treatment of alcoholics which is being successfully implemented by TTK Hospital, Chennai, in some centres in Tamil Nadu could be tried in Karnataka. Involve the local community in the relapse-prevention programme.</i>	Relapse of alcoholism is prevented.

Sl.No.	Major Recommendations	Outcome expected
5.11.5	<i>The departments of Excise (Finance), Health, Education, Social Welfare and Police should work together to implement and enforce the existing regulations and measures applying to production, sales, retail, taxation and advertising of alcohol.</i>	Better enforcement of regulations controlling alcohol.
5.11.6	<i>A differential Tax structure with a higher taxation on liquors than on beer or wine will help in discouraging the drinking of beverages with higher alcohol content.</i>	Discouraging drinking of beverages with higher alcohol content.
5.11.7	<i>A general awareness about "drinking and driving" should be undertaken by the Transport department. This should specify the type and amount of drink over which the person should not drive, explained in lay terms and not as percentage of alcohol. The laws against drinking and driving should be strictly implemented and exemplary punishment must be awarded to offenders.</i>	Alcohol related road accidents are reduced.
5.11.8	<i>Measures to prevent production and sale of illicit liquor should be enforced.</i>	Harmful effects of illicit liquor are avoided.
5.11.9	<i>Health education programmes for children and adolescents should include substance (including alcohol) abuse as well as Life Skills Education.</i>	Children and adolescents learn to avoid alcohol.
5.11.10	<i>Community level interventions by Government and by NGOs should include community awareness, Health Education, social support for battered women and children following alcohol consumption and vocational rehabilitation for reformed alcoholics.</i>	Domestic violence following drinking is reduced.
5.11.11	<i>Advertising agencies and media should be encouraged to self-regulate and avoid even covert messages.</i>	Demand for alcohol is reduced.
5.12	HEALTH ASPECTS OF DISASTER MANAGEMENT	
5.12	<i>The Government of Karnataka should commission a competent group of experts, administrators and policy makers including those in the field of health, to prepare a multi hazard plan for all districts in the state of Karnataka. This Plan should be completed before the end of the year 2001.</i>	Disaster management is a large issue which must be tackled with intersectoral cooperation.

Sl.No.	Major Recommendations	Outcome expected
	5. MENTAL HEALTH & NEUROSCIENCES	
6.1	MENTAL HEALTH	
6.1.1	<i>Train the medical officers and others at the Primary Health Centres to recognize mental health problems early, manage them effectively or refer them.</i>	Mental health problems are recognised early and managed effectively.
6.1.2	<i>Have District Mental Health programmes in all districts on the model of Bellary District Programme. All district hospitals to have mental health units with qualified psychiatrists and other trained staff and facilities for outpatient and inpatient care of the mentally ill persons.</i>	Every district has an effective mental health programme.
6.1.3	<i>Ensure availability of essential drugs for the management of mental disorders. Have counseling centers with qualified and trained personnel.</i>	Effective management of mental disorders.
6.1.4	<i>All medical colleges should have qualified psychiatrists and facilities for teaching medical students and for outpatient and inpatient care of mentally ill persons.</i>	Training of medical students and service is improved.
6.1.5	<i>Upgrade the Dharwad Mental Hospital, converting it to a centre of active treatment in a humane way.</i>	The only state institute has upgraded facilities and patient - centered care.
6.1.6	<i>Encourage community based rehabilitation of persons with mental disorders, who have recovered from acute illness. Encourage community based rehabilitation of persons with mental retardation, integrating them into the society.</i>	Community based rehabilitation of persons with mental retardation or chronic mental disorder.
6.2	NEUROLOGICAL DISORDERS	
6.2.1	EPILEPSY	
6.2.1.1	<i>Epilepsy Education: It is a key area that needs immediate attention. These programmes should aim at relieving stigma, and improving the compliance of the patient in taking drugs. It must also highlight DO's and DONT'S and focus on positive outlook on epilepsy. Recognise different types of epilepsy, including hot water epilepsy. Awareness should be created on Hot Water Epilepsy particularly in Chamarajanagar, Mysore and Mandya District.</i>	Better awareness of the problem and improved compliance with prolonged medication.

Sl.No.	Major Recommendations	Outcome expected
6.2.1.2	<i>The primary care physicians (both PHC doctor and private practitioner) and auxiliary staff have to be trained by a short term course, regarding diagnosis, treatment, epilepsy education, record keeping and monitoring. There must be a continuous supply of anti-epileptic drugs.</i>	Improved early diagnosis and treatment.
6.2.1.3	<i>Establish and strengthen epilepsy services at district hospitals through out-patients clinics with adequate supply of drugs. The district medical officers, physicians and paediatricians may be trained by a short course as it is done at NIMHANS under epilepsy control programme. Have a District Epilepsy Control Programme for planning, implementing, supervising and evaluating, epilepsy services. The programme officer may be incharge of all non-communicable disease.</i>	Improved management of epilepsy at the districts.
6.2.2	STROKE	
6.2.2.1	<i>Control of hypertension, discouraging smoking, reducing intake of saturated fats, and control of obesity are important measures to be instituted at all levels of health care. Antiplatelet drugs like aspirin 100-325mg are prescribed, to prevent further attacks. It may be used as primary prevention in a person who has a strong family history and risk factors.</i>	Stroke is prevented.
6.2.2.2	<i>Majority of stroke may be managed at PHC level with well-trained staff and certain specific cases to referred secondary / tertiary level as an emergency</i>	Effective management of patients with stroke.
6.2.2.3	<i>Training programmes for the management of all causes of neurological disorders to be instituted at NIMHANS for primary care physicians, both private and public. The training should be practical and should include physiotherapy.</i>	Improved training to deal with 'stroke'.
6.2.3.	NEUROLOGY AND NEUROSURGERY SERVICES IN GOVERNMENT MEDICAL COLLEGES	
6.2.3	<i>The Government of Karnataka must initiate immediate and energetic steps to establish Neurology and Neurosurgery services in all the four government medical colleges.</i>	Improved services in neurology and neurosurgery available at the Medical Colleges.

Sl.No.	Major Recommendations	Outcome expected
	<i>Train physicians and general surgeons at taluka and district hospitals to manage neurological disorders and head injuries and refer patients, when necessary to the Medical Colleges / NIMHANS, Bangalore.</i>	
6.2.4.	HEAD INJURIES AND TRAFFIC ACCIDENTS	
6.2.4	<i>The law regarding compulsory wearing of crash helmet by riders and pillion riders of two wheelers must be re-introduced to protect them from severe head injury. It is essential to educate the public regarding the road safety measures and benefits of wearing the helmet.</i>	Riders of two wheelers are better protected from the effects of head injury.
	7. NUTRITION	
7.1	<i>Supplementary food supply to pregnant mothers be increased, based on the need; this can be assessed based on the gain in weight, after excluding other causes.</i>	Improved nutrition status of the mother and the unborn child.
7.2	<i>Breast feeding to commence soon after delivery, to use the highly beneficial colostrums. Exclusive breastfeeding during the first 6 months. Breastfeeding to continue for 18-24 months (Method: education of the mother).</i>	Breast milk is wholesome food and nourishes the child.
7.3	<i>Semisolid weaning (supplementary) food, adequate in quantity and quality, be given to the infant under the ICDS scheme. In the case of the poor, weaning food be supplied free to the infants above 6 months (Department of Health Family Welfare services with the help of the departments of Women and Child Welfare and Food Supplies).</i>	Supplementary food ensures adequate nutrition.
7.4	<i>Growth monitoring to detect growth faltering, based on weights taken by anganwadi workers, with well-calibrated balances; follow-up action by the medical officers of PHC. If malnutrition is severe, admission and management.</i>	Early detection of under nutrition and intervention.
7.5	<i>Free mid-day meals (nutritious) to poor school children. (Department of Education).</i>	Improved nutrition and performance at school.
7.6	<i>PDS must be strengthened. More foods like ragi, other</i>	Improved nutrition of the poor.

Sl.No.	Major Recommendations	Outcome expected
	<i>pulses and oil to be supplied to the green card holders (Food and Civil Supplies).</i>	
7.7	<i>Ensure supply of iron-folic acid to adolescent girls and pregnant mothers. Ensure vitamin A prophylaxis. Calcium tablets to be supplied if indicated, to lactating and older women. Iodised salt in goiter prevalent districts.</i>	Micronutrients are made available.
7.7	<i>Nutrition and Health Education (Health and Family Welfare Services, Medical and Nursing Colleges and schools, University departments of Nutrition and Home Sciences); Nutrition education of the public.</i>	Improved awareness leading to action to reduce malnutrition.
7.9	<i>Prevent infection. If infection occurs, treat promptly. Improve access to health care of infants, children and pregnant mothers to PHCs and CHCs with the help of Paediatricians and Obstetricians and Gynaecologists. Safe drinking water and improved sanitation to prevent diarrheas and worm infestation. Periodical (once in a year) deworming.</i>	The additive effect of infection on undernutrition is prevented; so also the effect of other diseases.
7.10	<i>The District Nutrition Officer will co-ordinate the nutrition programmes in the district.</i>	A designated officer is given the responsibility to monitor and take corrective action.
7.11	<i>Encourage use of green leafy vegetables. Every house to have a kitchen garden. The Department of Horticulture to help with supply of seeds, seedlings, etc and promote the development of kitchen (nutrition) garden with drum-stick plants, green leafy vegetables, etc. Every PHC to consider possibility of developing a demonstration plot.</i>	Improved nutrition at low cost.
7.12	<i>Constitute an interministerial co-ordination committee (Health, food and civil supplies, agriculture, education, rural development and social welfare) to tackle the problem of malnutrition.</i>	Improvement in nutrition requires multi sectoral coordination.
	8. WOMEN AND CHILD HEALTH	
8.1	WOMEN'S HEALTH	
	<i>While general recommendations regarding Nutrition, STD & HIV/AIDS; Cancer control among women etc, are incorporated in the chapters on these topics, specific issues are emphasized here.</i>	

Sl.No.	Major Recommendations	Outcome expected
8.1.1	<i>All Health-care personnel should be sensitized on issues relating to gender inequalities. The curriculum for Medical Education and for training programs for health care personnel should include gender perspectives.</i>	All health care personnel become aware of and sensitive to gender issues.
8.1.2	<i>Gender dis-aggregated data and gender sensitive indicators to evaluate gender equity should be integrated in all plans & programs. Examples of gender disaggregated data would include birth and death details, actual consumption of the food and micro-nutrients supplied to pregnant women through the RCH / ICDS programmes; admissions & attendance at schools, hospital in-patient & out-patient records, immunization details, salary patterns for the same jobs and so on.</i>	Disaggregated data on various issues affecting the health of the people become available for suitable action.
8.1.3	<i>Violence against women and girls at societal and household levels to be eliminated through strengthening of institutional capacity (especially Health, Police and Judicial Sectors); involvement of women, and review of certain existing legal provisions</i>	Action to be taken to eliminate violence against women.
8.1.4	Health Sector: <i>Privacy is essential when interviewing clients about domestic violence and this should be ensured. Health personnel should be trained adequately and sensitively to recognize and treat signs of domestic violence, sexual abuse & violence associated with alcohol abuse; give legal advice and counseling. The hospitals should be made women friendly.</i>	Violence and sexual abuse are recognized and appropriate advice is given.
8.1.5	<i>Long term psychological support for sexually abused children of a trained counsellor / psychologist / psychosocial worker / psychiatrist should be identified within the Health system.</i>	Services of a counselor/ psychologist/ psychosocial worker is made available to sexually abused children.
8.1.6	Female foeticide & infanticide: <i>Actively look for female foeticide & infanticide.. Gender ratio at birth and other indicators to show trends, underlying causes should be used for community-level control programmes. The services of religious leaders can be used to strengthen the programme against foeticide and infanticide. IMA & other professional bodies should be encouraged to sensitize doctors to the legal & ethical aspects; self-regulate and socially boycott known offenders.</i>	Female foeticide and infanticide are reduced and finally eliminated.

Sl.No.	Major Recommendations	Outcome expected
8.1.7	<i>The Prenatal Diagnostic Techniques Act, 1994, should be enforced strictly.</i>	Female foeticide is reduced.
8.2	CHILD HEALTH	
8.2.1	<i>Have an additional health worker appointed by the Gram Sabha and trained to receive and resuscitate the newly born along with other duties as an experimental measure in the 7 northern districts found to have lower health status and extended, if found useful.</i>	Neonatal deaths are reduced.
8.2.2	<i>Develop Indira Gandhi Institute of Child Health as the apex body for training, service and research in child health. Tackle the major childhood problems of diarrhoea (leading to dehydration) and acute respiratory infections.</i>	Reduced child mortality and improved referral care
8.2.3	<i>Health education for children and adolescents should be the responsibility of the Health as well as Education department. This should be integrated into the formal school system and should include nutrition; sanitation; reproductive health, RTI/STI; HIV/AIDS; substance abuse, values & life skills and gender issues; Alternate mechanisms to reach school dropouts should be identified.</i>	School health education for children and adolescents brings about responsible behaviour.
8.3	REPRODUCTIVE & CHILD HEALTH PROGRAMME	
8.3.1	Quality of Services <i>The general quality of RCH services should be improved; a Quality Assurance programme should be developed and implemented. Changes in the procedure, equipment specifications, new techniques etc. should go through a specified evaluation process before being accepted for implementation. The patient's comfort and dignity are of first consideration. So the tilted laparoscopy tables & other such inconsiderate methodology should not be used.</i>	Quality and patients convenience and satisfaction are assured
8.3.2	<i>The attitude of doctors and other staff should be positive and helpful. This can be ensured through periodic internal audits, patient satisfaction studies and accreditation system with an external audit. Periodic auditing of maternal and infant deaths should be implemented to institute preventive strategies.</i>	Periodic audits are in place to ensure quality care.
8.3.3	<i>Availability of safe abortion (MTP) services for all women should be ensured. Sterilizations and MTPs should be carried out only at first referral units (Fixed-Day strategy) and not at camps.</i>	Safe MTPs are assured.

Sl.No.	Major Recommendations	Outcome expected
8.3.4	Infrastructure-Staff: <i>The system of deliveries by Dais should be supported, with enhanced training. Initial as well as periodic reorientation training for all birth attendants to ensure quality should be implemented. There should be periodic evaluation and up-gradation of the training courses.</i>	Improved performance by the trained birth attendant, resulting in safe delivery.
8.3.5	<i>To solve the problem of safety and timely attendance of ANMs: as far as possible, ANMs should be posted in their home villages; given loan facility to buy a two wheeler. Their workload needs to be rationalized- less paper work and better use of their expertise and talent</i>	ANMs have greater mobility and are able to carry out their functions more effectively.
8.3.6	Ensuring availability of trained staff: <i>Government may consider approved, training courses to provide services in the absence of a Medical Office.; Nurse-Obstetrician Practitioner at the PHC level and Short-term (6m to 1yr) training in anaesthesia for Medical Officers at the CHC level. The details of the course, feasibility etc. should be worked out by an expert team.</i>	In the absence of Lady Medical Officer at PHC, have a nurse-obstetrician trained anaesthetist helps in performing surgical, obstetric and gynaecological operations.
8.3.7	Disposable delivery kits <i>with good quality cost effective components - with the expectant mothers.</i>	Improved delivery
8.3.8	Subsidised menstrual cloth /pads <i>may be supplied to the poor, to promote personal hygiene and should be supported with awareness programmes to ensure correct usage.</i>	Improved menstrual hygiene.
8.3.9	Male Health Workers <i>should be given adequate training and skills to tackle gender issues and to ensure male participation through individual counseling as well as community education programmes.</i>	Male participation improves in the programme.
9. POPULATION STABILIZATION		
9.1	The unmet needs for family planning services <i>should be met, with options of choice and assured quality;</i>	The needs for family planning services are met.
9.2	Information, education and communication activities <i>should be enhanced to convey messages of the advantages</i>	IEC programme in place.

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	<i>of postponing the second child, of a two child norm, and of the health and familial advantages of spacing births and of raising age at marriage.</i>	
9.3	<i>There has to be regular and effective follow up of acceptors after they adopt any of the family planning methods to ensure that complications, if any, are attended to expeditiously. Such follow up would also encourage the increasing acceptance of family planning</i>	Regular follow-up reduces complications; if complications occur, they are attended to immediately.
9.4	<i>There should be no element of compulsion or pressure, particularly through camps or "pulse approach". The services should be such that their quality and availability, with regularity and at all times, with choice encourages voluntary adoption of family planning; (CNA methodology)</i>	Voluntarism and quality improve acceptance.
9.5	<i>New family planning technology should be adopted only after careful consideration of the ethical aspects of use of such technology, safety issues and cost effectiveness.</i>	Ethics, safety and cost-effectiveness considered before adopting new technologies.
9.6	<i>Ensure legal requirement of registration of all marriages. This would enable the stricter application of the law relating to restriction of age at marriage and assist in organizing out-reach services;</i>	All marriages are registered.
9.7	<i>The community, particularly women's groups, should be closely associated, in consultative and operational terms, with family planning programmes to reflect the perceptions and needs of the local community</i>	Community needs are met.
9.8	<i>The Population Policy for the State as part of Integrated Health Policy should be drafted. The draft policy would have to be widely publicized for public awareness and response, before it is finalized;</i>	A State Population Policy as part of the Health Policy becomes available.
9.9	<i>Districts may be prioritized on the basis of evaluation of the current status of the family planning services available and related social criteria, for enhancing the scale of the programme;</i>	Districts are prioritized to provide family planning services.
9.10	<i>For ensuring inter-sectoral coordination and monitoring of the programmes relating to family planning and re-</i>	A Commission on Social Development and Population is estab-

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	<i>lated sectors, a Committee on Social Development and Population Issues may be established at the official level, while at the Cabinet level a Commission on Social Development and Population may be established.</i>	lished at Cabinet level and a Committee at official level.
	10. FOCUS ON SPECIAL GROUPS	
10.1	PERSONS WITH DISABILITY	
10.1.1	<i>Establish the role of the Health department in Disability Prevention, Early detection, Intervention, corrective surgery and physiotherapy. Sensitise health-care workers on identification, classification, records of progress and evaluation, referral and home-based stimulation training. Staff from Leprosy control programs may be trained first.</i>	The staff of the Department of Health are sensitive to the issues in disability.
10.1.2	<i>Utilise Media to create awareness and training of parents and other caregivers on specific disabilities.</i>	Awareness is created among all caregivers
10.1.3	<i>Shift from institutional approach to a Community Based Rehabilitation-home-(parent) based approach; and from single to a multi-disability approach.</i>	Community Based approach is adopted.
10.1.4	<i>Networking initiatives – Get all people, Government as well as NGOs, from all sectors to meet at a common platform and plan out strategies.</i>	All people are involved in the programme for rehabilitation.
10.1.5	<i>Make provision for the manufacture, distribution and repair and maintenance of aids and appliances. Have an orthotic and prosthetic centre at every district hospital (as in Tamil Nadu).</i>	Aids and appliances are available as required.
10.1.6	<i>Develop and implement a policy of inclusive education. Train teachers for early detection and management of learning difficulties. Include evaluation and management of speech and hearing and other impairments in school health programmes</i>	Inclusive education is available.
10.1.7	<i>Ensure access to all health care institutions and other buildings, transport, water supply, sanitation etc., by incorporating necessary provisions in the statutes, rules, etc.</i>	Improved access to all buildings

Sl.No.	Major Recommendations	Outcome expected
10.1.8	<i>Implement the provisions of the existing legislation, including Persons with Disabilities Act, 1995 with respect to protection of the rights of persons with disabilities. Ensure equal opportunities in employment and training for persons with disabilities, by enforcing current legislation; enhance the provision for training and employment</i>	Provisions of the Persons with Disabilities Act are applied, ensuring equal opportunities.
10.2	HEALTH OF THE TRIBAL PEOPLE	
10.2.1	<i>A rapid survey of the health status of the tribals should be carried out. Region specific and tribe specific health plans should be made.</i>	Health status of the tribal people is known.
10.2.2	<i>The norms for Primary Health Centres and Subcentres in tribal areas should be based on geographical and population basis and they should be flexible. The mobile units should be made functional.</i>	Improved primary health care services.
10.2.3	<i>Tribal girls should be selected and trained as tribal ANMs and they should be posted in tribal subcentres. They should also be trained in traditional medicine and health practices.</i>	Improved health care.
10.2.4	<i>Traditional healing systems must be encouraged and documented in tribal areas and there should be integration of Allopathic medicine with the Traditional systems. Promote herbal gardens in tribal areas.</i>	Preservation of traditional healing systems and use for the benefit of the people.
10.2.5	<i>Genetic diseases like Sickle Cell Anaemia, G 6 PD Deficiency, which are specific to tribals should be given special importance with adequate funds and expertise, for their treatment, research and rehabilitation. Secondary and tertiary care, transport facilities for emergency services and obstetric care are essential. Community financing for emergency transport and referrals Health education, PRA exercises and micro planning, Convergent community action, training in communication skills and mobilisation of local health resources.</i>	Improved health of the tribal people.
10.2.6	<i>Ensure food security and encourage growing of nutritionally rich food crops. Public Distribution System should distribute cereals like ragi, bajra and pulses instead of polished rice and sugar. Promote kitchen gardens.</i>	Better nutrition.

Sl.No.	Major Recommendations	Outcome expected
10.2.7	<i>A HMIS of the health infrastructure, human resources, vital statistics and other health indicators specially for the tribals is mandatory and should be an on-going process.</i>	Health Management is improved.
10.2.8	<i>There should be increased collaboration between the government and the NGOs in tribal areas. The voluntary agencies must be involved in the development activities undertaken by the government.</i>	Collaboration between Government and Voluntary Organisations for improved health of the tribal people.
10.3.	THE ELDERLY	
10.3.1	<i>A policy for the elderly should be formulated, with particular safeguards for women. The administrative Department responsible for implementation of this policy should be designated. The management of both public and private institutions would need to be sensitized to the special needs of the elderly. Single point counters to avoid multiple trips to various counters in an institution, elimination of long waits and personal interaction.</i>	A policy for the elderly is available.
10.3.2	<i>The scale of user fees for health services, if charged, should be reduced in the case of the elderly patients, so as to lessen the burden on the household in availing of medical assistance for the elderly</i>	The burden on the family because of medical care of the elderly is reduced.
10.3.3	<i>Geriatric care facilities should be provided at the secondary and tertiary care levels. In addition, private health institutions should be encouraged to provide such facilities, and a per-patient payment system by Government could be considered.</i>	Specialised care of the elderly is available.
10.3.4	<i>For sensitization to the health issues of the elderly and training in providing health services to this group, (a) in-house training in geriatric care should be instituted within the Department, (b) the associations of private institutions could be requested to conduct similar courses, and (c) the content of medical, nursing and paramedical courses to be reviewed so as to train them in geriatric issues.</i>	Improved care of the elderly.
10.3.5	<i>Health insurance schemes for the elderly need to be</i>	Health Insurance of the elderly in

Sl.No.	Major Recommendations	Outcome expected
	<i>introduced. The formulation of such schemes could be assigned to the public sector Indian insurance companies, including the Karnataka Government Insurance Department.</i>	place.
10.3.6	<i>A scheme for provision of old age pensions to those below the poverty line with suitable safeguards to ensure that the right beneficiaries receive the amounts should be formulated;</i>	Old age pension as part of social security
10.3.7	<i>Non-government organizations could be assisted in utilizing the elderly in productive activities as teachers / guards and the like and establishing of care centers and counseling centres to advise the elderly and their families. Panchayat institutions could be encouraged to promote the welfare of the elderly and induct them, on fixed honoraria basis, for specific work in the community.</i>	Elderly people become productive members of the society.
10.3.8	<i>The introduction of legal provisions to ensure that the family takes the responsibility of looking after the elderly could also be considered as has been attempted through the Himachal Pradesh "Maintenance of Parents and Dependents Act", 1966.</i>	Law to ensure maintenance of the elderly by the family.
	11. HEALTH PROMOTION AND ADVOCACY FOR HEALTH	
11.1	HEALTH EDUCATION (IEC)	
11.1.1	<i>All the vacant posts in the different units/divisions of the Health Education Bureau must be filled up. Bring all IEC activities in the Department of Health & Family Welfare Services under Health Promotion; at the same time, ensure that the individual programmes do not suffer. Integrate the two sections of the Health Education Bureau into a division of Health Promotion.</i>	The Health Education Bureau becomes fully functional. Integration of all IEC activities under Health Promotion.
11.1.2	<i>The Block Health Educators must be fully trained and should have the necessary qualification (Diploma in Health Education); 50-60 Block Health Educators may be deputed annually for the training. An important part of the training must be skills development in community</i>	The Block Health Educators are qualified and competent.

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	<i>organization and involvement of the local people in health promotion and education. Strengthen community action.</i>	
11.1.3	<i>Encourage and support Mahila Swasthya Sanghas in health promotion. Have Village Health Committees; health promotion and education will be a major responsibility of these committees.</i>	Community participation is ensured.
11.1.4	<i>Have health committees attached to Doordharshan and AIR to actively help in health promotion. Have a watchdog committee to prevent wrong messages and 'unhealthy' advertisements.</i>	Improved use of media
11.2	HEALTH PROMOTION IN SCHOOLS	
11.2.1	<i>Medical examination of all students (1-10 standards) by the medical officers and the team of PHCs must be taken up seriously and the performance monitored by the District Health Officers. If necessary, the services of general practitioners may be taken and they be paid a suitable honorarium.</i>	Improved health of all school children.
11.2.2	<i>The Block Health Educators (2-3) may be attached to the Taluk Health officer. They must carry out health education in every school in the block and all the components of health education should be given as a package. District Health Education Officers must monitor the programme.</i>	Health education activities improved.
11.2.3	<i>Intensify the training of teachers for health; they should be enabled to detect diseases or disability at the earliest; corrective action should be taken by the PHCs doctors and the students must be followed up.</i>	Teachers are able to detect health problems among the school children at the earliest.
11.2.4	<i>The programme of health promotion among school children is the combined responsibility of Health and Education departments</i>	Collaborative efforts of the departments of health and education produce improvement in health.

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	12. HUMAN RESOURCE DEVELOPMENT FOR HEALTH	
2.1	EDUCATION:	
12.1.1	<i>The issuing of Essentiality Certificates by the Government and affiliation by the University for new Medical, Dental, Nursing, Pharmacy and Physiotherapy Colleges should be stopped for the next two years, the exception being Colleges in underserved districts of Karnataka. This is to ensure quality of education, with adequate teaching staff and other facilities. Extend the moratorium on new Ayurvedic, Unani and Homeopathy Colleges for two more years. Fill up all vacancies of teaching staff by suitably qualified persons</i>	Improved quality of education of health professionals.
12.1.2	<i>Take up urgently the repairs of the building of the colleges, hospitals, hostels, equipments and vehicles of the Government teaching institutions. All equipments must be maintained in good working condition.</i>	Better facilities for the education of health professionals//
12.1.3	<i>Improve the emergency and casualty services. There should be available round the clock diagnostic (x-ray and laboratory) services.</i>	Improved emergency care
12.1.4	<i>Medical Colleges should take up 3 PHCs for training and service. Dental and Nursing Colleges should take up 1-3 PHCs for the same purpose.</i>	Improved training of students and better service to the people.
12.1.5	<i>Extra vigilance is necessary at the University examinations. Corrupt examiners should be debarred from examinerships.</i>	Corruption is eliminated.
12.1.6	<i>Monitoring and evaluation (performance appraisal) of teaching and other staff in the health professional colleges and affiliated institutions should be carried out once a year; the performance should be taken into consideration for promotion and other benefits.</i>	Performance is monitored and action taken.
12.1.7	<i>Appropriate training and re-training of Heads of Depts, Resident Medical Officers, Medical Superintendents, Principals and Directors in management, (personnel, finan-</i>	The hospital administration is improved with better utilisation of facilities.

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	<p>cial, materials and time) should be taken up on priority basis.</p> <p>The possibility of appointing qualified and trained hospital administrators in teaching hospitals to be considered.</p>	
12.1.8	<p>Every professional college should have an education unit to improve the teaching capability of teachers. RGUHS should organize teacher-training programmes. Make use of the facilities at the National Teacher Training Institute at JIPMER, Pondicherry.</p>	Teachers are better trained; quality of education improves.
12.1.9	<p>The possibility of bringing the non-teaching staff in Medical College Hospitals under the control of Department of Medical Education may be studied and action taken to implement the decision.</p> <p>The Officers in the Department of Medical Education should have sufficient powers to take suitable disciplinary action even on staff who are on deputation from the health department. An administrative manual setting out the powers and duties may be brought out.</p>	The Officers of the department of Medical Education have sufficient administrative and disciplinary control over the staff seconded to the department.
12.2	TRAINING	
12.2.1	<p>Have a detailed survey of the need for training of paramedics and take appropriate action. Review the job oriented paramedical courses.</p>	There is co-ordination between the needs and the availability of trained personnel.
12.2.2	<p>Auxiliary nurse midwives training to be taken up seriously. Whether there is need for extension of period of training to 24 months (from 18 months) must be examined.</p>	Auxiliary nurse midwives are key personnel in health and they are trained well.
12.2.3	<p>Use developments in Information technology for continuing education of all health and allied professionals and paramedical personnel.</p>	Improved training
12.2.4	<p>The State Institute of Health and Family Welfare should be upgraded to become the apex training institute, making it an institute of excellence.</p> <ul style="list-style-type: none"> - The State Institute will be an autonomous body, with adequate funds for its activities and maintenance allocated from the State Health and Family Welfare Department Budget directly. 	The State Institute becomes the nodal institute for all training and has upgraded facilities.

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	<ul style="list-style-type: none"> - The post of Director of the Institute will be selection post. The tenure will be 5 years. The Director will be medically qualified and will have training and experience in education technology and training of trainers. It would be preferable to have persons with some experience of having worked in the Department of Health and Family Welfare Service. - The Institute will have full complement of training, research, administrative and supportive staff with appropriate qualifications. - Considering the importance of social sciences and communication skills, the Institute will have either full-time / part-time staff for these departments or engage the services of experts as and when required for the training sessions. - The Institute will have all the necessary equipment and facilities including teaching / learning space and identified field practice areas. - The Institute will have an up-to-date digital library and documentation centre. <p>The State Institute will conduct induction and orientation programems for medical officers and other staff and arrange for continuing education for all the staff of the Department of Health and Family Welfare Services and the Department of Indian Systems of Medicine and Homeopathy.</p>	
12.2.5	<p>The Regional Health and Family Welfare Training Centre will be administratively under the State Institute.</p> <ul style="list-style-type: none"> - The regional centers will plan and execute the training programmes based on the needs of the region; these will be supervised and co-ordinated by the State Institute. - The Regional Centres should have adequate staff with requisite qualifications, competence and suitability, as also all necessary equipment and facilities. 	The Regional Centres are able to meet the specific needs of the region.
12.2.6	<p>All Districts will have their own District Training Centres to meet the training needs of the district.</p> <ul style="list-style-type: none"> - The District Centres would be under the State Institute administratively - The State Institute will plan (along with the District 	The District Centres meet the training needs of the district.

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	<p>Centre), supervise and co-ordinate the training programmes.</p> <ul style="list-style-type: none"> - The District Centres will oversee the functioning of the ANM training centers. - Adequate staff with necessary qualifications and competence and all necessary equipment and facilities will be provided to the District Centres. 	
12.2.7	<p>The State Institute will, along with the Strategic Planning Cell of the Directorate of Health and Family Welfare Services, identify the training needs and draw up a master plan for the training of staff at all levels. The training should be in the State mostly. Fellowships / scholarships offered by WHO, Commonwealth and other similar organizations must be availed of. The State Institute and the Planning and Monitoring Division should work together to get the relevant information and have the staff deputed according to the needs of the State and the suitability of the staff member.</p>	<p>The needs of the State for training are planned and offers for training utilised.</p>
12.2.8	<p>The State Institute must plan and conduct courses in Public Health:</p> <ul style="list-style-type: none"> - short term orientation courses (2 weeks?) for all medical officers and selected other staff; - longer certificate courses (6 months?) for all medical staff in the public health cadres, for the period of transition till sufficient number of persons with DPH or higher qualification are available. <p>DPH and higher courses, in collaboration with the Rajiv Gandhi University of Health Sciences, to be started in 3 years.</p>	<p>Public Health regains its importance in improving the health of the people.</p>
	13. RESEARCH IN HEALTH	
13.1	<p>Develop Vision, Mission and Strategy Statement on research at the primary health care level as also at the secondary and tertiary levels and in public health.</p>	<p>The process helps the State to plan the research activities.</p>
13.2	<p>Study the status of research projects (completed and ongoing) managed by the Department of Health and Family Welfare, Medical Education and Indian Systems of Medicine and Homeopathy.</p>	<p>The study helps to improve the quality of research.</p>

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13.3	<i>Set up a Research Board and a think tank to identify the problems. Invite experts to brainstorm, allocate funds and resources from Government (state and central), Universities, Indian Council of Medical Research, Department of Science and Technology (ICMR, DST) and Pharmaceutical Industries.</i>	Improved quality of research and adequate funds.
13.4	<i>Create infrastructure for digital library, information and documentation center. Set up access to the Internet and databases. Make available leading research journals and publications.</i>	Services of information are increased.
	14. HEALTH SYSTEMS MANAGEMENT	
14.1	ADMINISTRATION	
14.1.1	<i>Structure of Health Services: The emphasis on public health should be revived and its essentiality recognized; two separate cadres may be constituted relating to Public Health and Medical (clinical) based on integrated and common functions.</i>	Public Health gets its due importance.
14.1.2	<i>The Directorate of Health Services would be in charge of a Commissioner / Director General of Health Services. This post would be filled by a senior IAS Officer of the State Cadre or through contract appointment of an eminent professional from within the department or outside it.</i>	More efficient and effective functioning.
14.1.3	<i>The levels of health personnel up to the district level should constitute district cadres, selection to State cadres being made from these cadres on the basis of merit cum seniority. Appropriate transitory mechanisms for exercise of options by the present staff. A suitable recruitment mechanism should be established for appointment of doctors and others at the basic level: either a District Recruitment Committee or a State level Local Services Recruitment Board, depending on the level / grades of staff to be recruited;</i>	District and State cadres come into effect.
14.1.4	<i>Recruitment doctors would be at the level of the PHC, assignment to the Public Health or Medical Cadres being</i>	Initial recruitment and subsequent career in two streams.

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	<i>made after a certain period and subject to qualifications and training.</i>	
14.1.5	<i>A Taluka Health Team under the Taluka Health Officer may be constituted which includes the Block Health Educators, Senior Health Inspector, the Refractionist and the Senior Lady Health Visitor;</i>	A Taluk Health Team is created
14.1.6	<i>The District Health Officer and the District Medical Officer would be designated as the district health chiefs and be made responsible for all concerned activities in the district;</i>	The District health chiefs are identified.
14.1.7	<p>General Administrative Issues:</p> <p><i>The restructuring of the health services would call for amendment of the Cadre and Recruitment Rules and for consideration of the transitory arrangements. A Committee with the Commissioner as Chairman should be set up for this purpose, with a mandate to complete the process in a specified time so that the new structure is in position in a year's time.</i></p>	Amendments to C & R rules to enable the re-organisation of the health services.
14.1.8	<i>The present system of annual appraisal reports needs to be reviewed and made performance specific. Also, a system of medical audit should be instituted for assessing performance of hospitals;</i>	Improved performance appraisal so that action can be taken to improve performance.
14.1.9	<p><i>Private practice by health personnel would be subject to the following conditions:</i></p> <p><i>a) Hours of duty will be stipulated in all health / medical institutions of the Directorate and prominently displayed for public knowledge. The hours of work would take regional, seasonal and other factors into consideration. All personnel should adhere to these hours and the responsibility to ensure this would be that of the superior officer;</i></p> <p><i>b) Doctors may be allowed private practice outside these stipulated duty hours and only when not on call or required for emergency service, subject to the remission every month to Government of one-third the basic pay of the staff member who so practices;</i></p> <p><i>c) The Directorate would identify and notify those posts</i></p>	Conditions under which private practice by doctors in government service is permitted are set out

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	<p>where private practice is banned, based on criteria to be evolved. The incumbents of these posts would be paid a monthly "non-practicing allowance" of one-third the basic pay of the post;</p> <p>d) All doctors in the Directorate, at all levels, would provide an affidavit at such periodic intervals as may be specified affirming whether they are or are not carrying on private practice. This would form part of the service record;</p> <p>Those found contravening the affidavit would be subject to disciplinary actions as may be prescribed in the relevant rules. In the long term private practice all government medical officers will be banned paying them reasonable salaries.</p>	Medical Officers will be available for better service, training and research
14.1.10	Internal institutional mechanisms for detection of and enquiry in cases of corruption should be set up for expeditious detection and punishment;	Corruption is reduced significantly
14.1.11	All externally aided projects would be within the structure of the Department, even if implemented by a distinct Division within the Department, as suggested in the restructuring of the Department;	The Department owns the projects
14.1.12	Morale needs to be built up by adoption of transparent procedures with regard to transfers, selection for training or courses, regularization of contract doctors, providing soft loans for transport to PHC doctors and field personnel and the like.	The morale of the staff is improved
14.1.13	The orders relating to delegation of powers, both financial and administrative, need review. The Commissioner may carry out such a review.	Better delegation of powers leading to early and appropriate action.
14.1.14	<p>All vacancies should be filled expeditiously. Vacancies in a "service" Department result in serious reduction of quality and availability of health facilities;</p> <p>Budget cuts for health services should not be made since these not only reduce the scale of the services but also result in deterioration of existing ones. Such cuts are counter productive.</p>	Health services function efficiently and effectively.
14.1.15	It is necessary to extend the technical authority of the Director, Public Health / Director, Medical over health	The Department of Health Services provide technical guidance

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	<i>matters in urban areas that are under the control of the municipal authorities. This could be done through the issue of orders under the existing Municipal Acts.</i>	to the local administration
14.1.16	<i>The existing mechanisms should be used effectively to monitor and interact with the specialty institutions, including the Central ones;</i>	Improved co-ordination.
14.1.17	<i>The possibility of contracting out non-clinical services in increasing degree should be explored;</i>	Improved efficiency.
14.1.18	<i>The Population Centre may be redesignated as the Centre for Population and Health Studies, and its role expanded. It may be placed under the Principal Secretary.</i>	The Centre for Population and Health Studies becomes a centre for evaluation and research.
14.1.19	<i>The system of registration of births and deaths needs to be reviewed to enhance its accuracy, coverage & utility.</i>	Improved vital statistics
14.2	PLANNING AND MONITORING	
14.2.1	<p><i>A Planning and Monitoring Division should be organized incorporating the Strategic Planning Cell and vested with the authority to call for information from all other Divisions. This Division should be responsible for strategic planning of activities of the entire health system, including long term planning, coordination with the Zilla Panchayats to ensure that the health plans of the districts, talukas and Gram Panchayats are integrated into the State Health Plan, and assessing budget resources for current and future needs, taking into consideration population, level and norms for services and other relevant parameters, and assessing human resources and all material resources on a continuing basis.</i></p> <ul style="list-style-type: none"> <i>- The Division would have to include a Reporting and Monitoring Section, a Geographical Information System, a Computer Division and a Perspective Planning Section.</i> <i>- All reporting activities with regard to the HMIS should be vested in this Division. The analysis of information and generation of monitoring reports for various levels would be the responsibility of this Division, to enable assessing performance and initiating corrective action;</i> 	A planning and monitoring division comes into function to plan, prioritise, workout budget resources, monitor and evaluate the activities of the Department.

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	<ul style="list-style-type: none"> - A website would have to be developed and maintained with all information relating to health services, including financial and performance details; - This Division would function as the secretariat for the Commission on Health that has been recommended to be established. 	
14.2.2	<i>The statistical (HMIS) offices in the districts may be established with adequate computer facilities. District level monitoring reports must be produced for enhancing management capacity at the district level;</i>	District planning and monitoring are effected
14.3	HEALTH MANAGEMENT INFORMATION SYSTEM (HMIS)	
14.3.1	<p><i>A comprehensive Health Management Information System (HMIS) should be put in place by end of the year 2001 to enable the Health and Family Welfare Department to improve its service delivery. This should include the following elements:</i></p> <ul style="list-style-type: none"> - <i>Adequately fulfill human power requirements and avoid mis-matches especially in the posting of Medical officers, details regarding all personnel, at all levels, (viz. Number of sanctioned posts & number filled; recruitment, transfers, leave etc) should be computerised and monitored.</i> - <i>Details regarding infrastructural facilities – buildings, equipment; etc. should be monitored continually to ensure adequate availability, timely repairs, civil works and so on.</i> - <i>A comprehensive Disease surveillance system should be evolved. This should continually scrutinize, monitor, evaluate and plan for control & / or eradication of diseases, especially diseases of Public Health importance and should be useful at grass roots levels for prevention and management of disease outbreaks.</i> - <i>The HMIS should be an effective monitoring tool to assess the performance of the system and which provides for informed planning and decision by the DHS. At the same time it should also support micro-planning and management at all levels where action is essential. The performance indicators & protocols required for objective monitoring of all health activities up to the subcentre level should be worked out.</i> 	Comprehensive Health Management Information System comes into place to effectively assist all activities of the Department.

Sl.No.	Major Recommendations	Outcome expected
14.3.2	<i>To increase the efficiency and validity of reporting mechanisms, the minimum required data that has to be collected should be identified; integrated reporting formats should be developed and adequate supply of registers/forms especially at the subcentre level should be ensured.</i>	Reporting improves
14.3.3	<p><i>The Human power and Infrastructure data, Disease surveillance system and a geographical information system (GIS) should be integrated into one computerized system Computerization which is envisaged at the District and State level initially, should be extended to the Taluka and PHC levels at the earliest.</i></p> <p><i>The staff at decision- making levels should be trained to use the HMIS & GIS effectively for micro-level action and planning.</i></p> <p><i>Training in basic computer literacy including GIS System and data entry and analysis of all categories of staff involved should be effected.</i></p> <p><i>Connectivity and communication systems between the different health institutions, offices and levels should be established. To start with all 27 Districts and Directorate should be connected. Later all Talukas could be connected.</i></p> <p><i>An expert panel should monitor and upgrade the system to keep up with the constant and rapid evolution in IT.</i></p>	All data are computerized helping prompt and easy action.
14.3.4	<i>The present system concentrates on information on communicable diseases. It should also get geared up for management of non-communicable diseases, especially with the changing patterns of diseases due to urbanization, industrialization, pollution, changing life styles and life expectancy.</i>	All information regarding communicable and non-communicable diseases become available.
14.3.5	<i>The web page of the department should be constantly updated. It should be maximally utilized not only for awareness and information but also as a means for promotion of transparency.</i>	The information is made available to all
14.3.6	<i>In the long run mechanisms to utilize the computer networking for "Distance-Learning" programmes, "Tele Medicine" etc. for the health personnel, and for Health Education and Health Promotion activities for the community could be identified and implemented</i>	The information is utilised effectively for education and promotion of health.

Sl.No.	Major Recommendations	Outcome expected
	15. HEALTH FINANCING	
15.1	<i>A study of the availability and financing of health services provided by the State, by local authorities and by the private sector should be carried out;</i>	Reliable data become available of the financing of health services.
15.2	<i>Parameters should be evolved for rational allocation of funds to districts and sub-regions to ensure a degree of equity in availability of services, with flexibility being built in for special circumstances, taking into account the health plans of the Zilla Panchayats;</i>	Greater equity is assured.
15.3	<i>An internal review of specific allocations is necessary to reflect the needs of certain essential activities in a realistic manner. This would be particularly necessary in the case of supporting and infrastructure services. Some of the critical areas which would need enhanced allocations would include repairs of vehicles, equipment and buildings, touring for better supervision and administrative charges of the PHCs;</i>	Improved allocations to critical areas.
15.4	<i>Budgetary cuts should not be made in allocations for health services. Such cuts destroy continuity and levels of services built up over time and only prove counterproductive in the long run;</i>	Continuity of services at optimum level is assured.
15.5	<i>It should be ensured that release of funds and sanction orders are issued well in time and that the quantum of funds released should be adequate since such releases, in combination with sufficient financial delegations, would ensure maintaining and improving health services;</i>	Improved utilisation of finances in time and, therefore, optimum services.
15.6	<i>It is necessary to ensure coordination in the budgeting of the various Departments and Divisions of the health and medical services. This responsibility may be assigned to the Commissioner as a coordinating officer, with authority to call for information from associated Departments / Directorates. The Planning and Monitoring Division to be established directly under the Commissioner may be assigned this role. To assist this Division a post of Financial Adviser be created in this Division. This post could be filled by a health economist or by selection, based on experience, from the State Accounts Department or Planning cadres of Government;</i>	Improved budgeting

Sl.No.	Major Recommendations	Outcome expected
15.7	<i>The need for the current large number of distinct accounts offices in various Directorates / Departments of the health services results in lack of coordination. The possibility of their integration would have to be studied.</i>	The study will bring out information, based on which action can be taken on integration of the accounts offices
15.8	<i>The adequacy and implementation of financial delegations within the health services would need review. This may be done by a Committee under the Chairmanship of the Commissioner. Nonperformance due to non-utilization of delegated authority should be one of the parameters for assessing annual performance;</i>	Delegation of financial powers appropriate to the level of responsibility; the officers will be accountable for performance.
15.9	<i>Internal procedures for monitoring expenditure, particularly in the case of acquisition of equipment and infrastructure, would need to be reviewed to ensure expeditious utilization of allocations in the best manner possible;</i>	Better utilisation of the funds.
15.10	<i>The reporting system and formats prescribed for the field level officials, particularly the ANMs, would need to be reviewed to rationalize them and reduce workload.</i>	Rationalisation of the reporting system at the field level
15.11	<i>A comprehensive review of the financial reporting system is necessary so that it becomes part of the HMIS that has been recommended;</i>	A rational financial reporting system is in place.
15.12	<i>The system of user fee is a good feature and should be periodically reviewed to enhance both the base and the scale of fees, if called for. It would be necessary to reiterate that the collection of user fee by a hospital would be exclusively meant for its improvement;</i>	Periodical review and revision of user fee to be used by the hospital, where the fees are collected
15.13	<i>Schemes for community insurance based on Self Help Groups for non-hospitalization cases or with involvement of national insurance companies for hospitalization cases should be formulated and tried out on a pilot basis to develop a replicable model;</i>	Community insurance to be tried out on a pilot basis.
15.14	<i>A scheme for liability insurance for doctors in the Department, including group insurance schemes, needs to be formulated in consultation with public sector insurance companies, including the Karnataka Govt</i>	A scheme of insurance against claims of damages to be worked out.

Sl.No.	Major Recommendations	Outcome expected
	<i>Insurance Department. The scheme may stipulate that doctors meet half the costs of the premium;</i>	
15.15	<p><i>Norms for health services based on adequacy of services and quality should be developed as guidelines for formulation of budget requirements. These norms would also provide guidance for assessment of the financial elements of the perspective plan for health services;</i></p> <p><i>Norms in terms of both quality and adequacy, with regard to expected outcomes of expenditure need to be evolved for monitoring of efficiency of use of funds. Such norms must be developed for various functional levels, including the Zilla Panchayats;</i></p> <p><i>The long-term requirements of health services would need to be assessed on the basis of the norms suggested above and on the basis of the perspective plan for health services. In assessing these requirements, the requirements to sustain the assets and services created at considerable cost through externally aided projects must be built in.</i></p>	Norms would be available for budgeting and other requirements.
15.16	<i>Test audit through chartered accountants may be tried on a pilot basis for evaluating the performance of health services at PHC and taluka levels and also to induce a sense of financial discipline. A pilot audit could be instituted in consultation with the Institute of Chartered Accountants. The Planning and Monitoring Division could be the nodal office for this pilot study;</i>	Auditing of PHC would be done, first as a pilot study and extended if found feasible and useful.
15.17	<i>A study is necessary of the scale of health services and the financial outlays on such services in Municipal Corporations and other municipal bodies to assess the total health expenditure on health in the public domain. Such a study would help in assessing the needs in urban areas.</i>	The financial and other needs of the urban areas become known.
15.18	<i>A study of costs on health services to families may be conducted, after an evaluation of the results of studies already available, for guidance regarding enhancement of services for the economically weaker section of society at affordable costs;</i>	A major part of the health expenditure is met by the family, which makes the family impoverished; affordability of services must be known.

Sl.No.	Major Recommendations	Outcome expected
15.19	<i>The staffing pattern would need to be reviewed at intervals to determine both adequacy and excess and critical shortages. A Staff Inspection Unit trained in Organization and Management principles could be assigned this task;</i>	Adequate staffing is critical in the optimum functioning of health care services.
15.20	<i>A financial database may be built up as part of the composite HMIS that has been recommended for the health services. The system of computerization of financial information and of the accounts should be built up without delay.</i>	The financial needs and utilisation will be known.
	16. RATIONAL DRUG MANAGEMENT	
16.1	<i>Procedures should be established for quantifying the essential drugs required for the State, to optimize the pooled procurement through the Rate Contract. The Zilla Panchayats may make use of the rate contract for 90% of their requirements, reserving 10% for discretionary purchase.</i>	The quantity of the essential drugs required are known to get advantage of the bulk purchases through the Rate Contract System.
16.2	<i>Procedures should be established for developing, disseminating, utilizing & revising Standard Treatment Guidelines.</i>	Standard Treatment Guidelines are worked out to improve the outcome of treatment.
16.3	<i>Procedures should be established for developing & revising Essential Drug Lists and a State Formulary based on treatment of choice for the level of expertise- primary, secondary, tertiary, speciality and teaching.</i>	Essential Drug Lists based on level of expertise available and Formulary for institutions at different levels become available.
16.4	<i>Every hospital should have a Drugs & Therapeutics Committee for monitoring & promoting quality use of medicines. Specific guidelines for Rational Use of drugs, especially, Antimicrobials and Analgesic are a must. Use Generic names of drugs for procurement, supply and prescribing. Implement problem based training in pharmacotherapy in undergraduate medical & paramedical education based on Standard Treatment Guidelines to promote Rational use of Drugs. Encourage problem-oriented in-service educational programs by professional societies, universities, & the min-</i>	Rational Use of Drugs will be assured.

Sl.No.	Major Recommendations	Outcome expected
	<p>istry of health & require regular continuing education for licensure of health professionals.</p> <p>Stimulate an interactive group process among health providers and consumers to review & apply information about appropriate use of medicines. Train pharmacists to be more active members of the health care system & to offer better advice to consumers about health & drugs.</p> <p>The concept of Drug Information should be popularized among the health care professionals & the public. Drug Information Centre must be accessed for unbiased, objective information.</p> <p>The Services of the State Karnataka Pharmacy Council may be utilized for all the above purposes.</p>	
16.5	<p>Monitor adverse drug reactions so that appropriate and early measures can be taken to ensure safe use of drugs. Encourage active involvement by consumer organizations in public education about drugs and allocate government resources to support these efforts.</p> <p>Procedures should be established to ensure proper labeling of drugs. The packages and the inserts should be adequately labeled to enable people to use drugs properly. It should also mention most common side effects and danger signals, special precautions in case of children, pregnant and lactating mothers, and old people. The labeling should be printed in adequately bold size. The labeling in case of O.T.C. drugs should be more detailed, giving all indications, contraindications, common side effects and danger signals. The labeling should be made in English, Hindi and the regional language.</p>	Improved safety in the use of drugs.
16.6	<p>The Government Medical Stores and the District Stores to be re-organised to ensure proper and on-time distribution of all essential drugs. Monitoring of drugs to be received from the centre, their actual receipts and supply to be monitored vigorously.</p>	The Medical Stores at the State headquarters and districts are re-organised for greater efficiency and effectiveness.
16.7	<p>The Drug Control Department to be re-organised with sufficient number of Drug inspectors and Drug testing laboratory. Regulation of Drug Company's Promotional Activities is important. Promotional literature for phar-</p>	The Drug Control Department is able to perform its duties better.

Sl.No.	Major Recommendations	Outcome expected
	<i>maceuticals, guidelines for sponsorship of Symposia and Other Scientific Meetings, Advertisements, Free samples of prescription drugs for promotional purposes, Post-marketing scientific studies, surveillance and dissemination of information should conform to guidelines.</i>	
16.8	<i>A strategic approach is to be developed to improve prescribing in the private sector through appropriate regulation & long-term association & collaborations with professional associations.</i>	More rational use of drugs in the private sector also.
16.9	<i>In view of the trends in increased use of traditional medicines, it is essential to facilitate the establishment of regulation and registration of traditional medicines.</i>	Better regulation of the use of traditional medicines.
16.10	<i>The services of the Karnataka Antibiotics and Pharmaceuticals Limited to be made full use of, for the production of quality drugs needed by the State.</i>	Better use is made of the facilities of Karnataka Antibiotics and Pharmaceuticals Limited.
	17. LAW AND ETHICS	
17.1	<i>Implement effectively the existing laws affecting health and health care, and especially the laws such as the Human Organs Transplant Act, 1994 and the Prenatal Diagnostic Techniques Act, 1994.</i>	Effective implementation of the existing laws is assured.
17.2	<i>Renew the registration of health professionals in the State once in 5 years, with evidence of sufficient credits of having participated in approved continuing education programmes.</i>	Prevention of obsolescence and upgrading of competence.
17.3	<i>The respective professional councils should ensure that the members of the profession practice ethically, following their codes of conduct. This may be done through an amendment of the respective Acts.</i>	It is the duty of the professional councils to ensure that the members practise ethically.
17.4	<i>Enact a comprehensive law to ensure registration and quality assurance of all health care institutions in the state, on the lines suggested by the Task Force and forwarded to the Government. Promote accreditation.</i>	Quality assurance and continuous quality improvement.
17.5	<i>Enact a comprehensive Public Health Act, based on the</i>	An effective and comprehensive

Sl.No.	Major Recommendations	Outcome expected
	<i>Model Public Health Act (1987) with suitable modifications.</i>	Public Health Act is in place.
17.6	<i>Examine in depth the problem of quackery and take effective steps to stop it.</i>	Quackery, which is a hazard to the health of the people, is reduced.
17.7	<i>Arrange for monitoring of the activities under the Human Organs Transplant Act, by an independent agency, to stop the sale of organs. The Institutions should actively promote cadaveric transplants and those performing more than 20% unrelated live donor transplant of kidneys should not be re-certified. There should be dialysis in all district hospitals. The Appropriate authority for Organ Transplantation may be reconstituted with inclusion of representatives of voluntary organisations.</i>	The sale of organs is reduced; more cadaveric transplants are encouraged.
17.8	<i>Every health care institution to have a Charter of citizens rights and rights of patients. The Charter should be displayed prominently.</i>	Greater transparency and integrity. Rights of patients are honoured.
17.9	<i>Update the "Prohibition of Smoking Act". Ensure the welfare of tobacco growers when cultivation is restricted & of beedi workers when manufacture & use are reduced.</i>	Use of tobacco is reduced and thereby, the harmful effects on the health of the people.
17.10	<i>Make the teaching/learning of ethics as part of health professions education. Make the health personnel aware of the codes of conduct. Have training programmes in medical ethics for all health care personnel and particularly the doctors and nurses.</i>	The health care personnel practise ethically.
	18. INDIAN SYSTEMS OF MEDICINE AND HOMOEOPATHY	
18.1	<i>The sanctioned post of Joint Director is to be filled. In the absence of C & R rules the senior person may be placed in charge and duties may be assigned. Existing senior doctors may be designated as District level officers of the respective districts. In 11 districts where there are already hospitals, it can be implemented immediately. These district level officers posts are to be filled by selection based on merit-cum-seniority.</i>	A senior, experienced person is in charge, at the same time ensuring competence.
18.2	<i>Dispensaries and hospitals are to be renovated after a survey by the Department. Develop uniform norms for</i>	Improved facilities in the units of ISM&H.

Sl.No.	Major Recommendations	Outcome expected
	<p>dispensaries and hospitals, with regard to plan, space, infrastructure and staff.</p> <p>Construct special wards with all amenities atleast in the major hospitals attached to teaching institutions at Bangalore, Mysore and Bellary.</p>	
18.3	<p>Establish or relocate units of ISM&H with necessary infrastructure at CHCs, Taluka and District hospitals.</p>	Availability of modern medicine and Indian Systems of Medicine and Homeopathy, at the same place; choice is left to the people.
18.4	<p>Establish herbal gardens in ISM&H units, PHCs and CHCs for utilisation and demonstration for the public with the help of forest department (social forestry).</p>	Improved use of herbal medicines.
18.5	<p>Provide residential accommoation near the place of work for physicians of ISM&H. If Government accommodation is not available, houses may be taken on rent.</p>	Availability of doctors of ISM&H is improved.
18.6	<p>There is an urgent need to make available the facilities for investigative procedures with qualified and technical staff in all the hospitals. This can be done in collaboration with the hospitals of modern medicine at various levels.</p>	Improved availability of diagnostic procedures.
18.7	<p>The services of contract doctors need to be regularized, based on performance appraisal</p>	Improves the morale of the doctors.
18.8	<p>The Boards of Visitors are to be re-constituted immediately in order to improve the functioning of the hospitals.</p>	Better people's involvement.
18.9	<p>Provide all dispensaries and hospitals with a working telephone</p>	Improved communication.
18.10	<p>Establish the speciality units of panchakarma and ksharasutra in all district hospitals first and then taluk hospitals.</p> <p>The major hospitals are to be upgraded and enlarged to meet the requirements and demands with adequate human force, equipments and other accessories, after a need assessment.</p> <p>Well-planned OP blocks in all the major hospitals of Bangalore, Mysore and Bellary.</p>	Have speciality treatment available. Major Hospitals are upgraded.

Sl.No.	Major Recommendations	Outcome expected
18.11	<i>Fill up the vacant post of Siddha Physician in the 10-bedded Siddha ward at Sri. Jayachamarajendra Institute of Indian Medicine, Bangalore.</i>	The post of Siddha Physician is filled.
18.12	<i>There is a need to enhance the budget provision for procurement of medicines in dispensary atleast to a sum of Rs.36,000/- p.a.</i>	Increased availability of essential drugs
18.13	<i>Steps have to be taken to provide hostel facilities in all the major medical colleges.</i>	Improved accommodation for the students.
18.14	<i>The disparity in pay scales of doctors and stipend for interneers of ISM&H and modern medicine may be studied and action taken on priority, to remove the inferiority feeling or low esteem prevailing amongst doctors and students of ISM&H</i>	Disparity reduced.
18.15	<i>Study the need for developing appropriate training courses with special modules for paraclinical staff such as Masseurs, Nurses ,Health extension workers and pharmacists and take necessary action</i>	Paramedical staff become available, with improved quality and numbers.
18.16	<i>The facilities of the State Institute of Health & Family Welfare should be made use of for the training of ISM&H personnel. The training should include hospital management for those in charge of hospitals.</i>	Improved training in all aspects including management.
18.17	<i>CME courses must be periodically conducted to update knowledge and skills of the practitioners of ISM&H. Sufficient credit hours must be earned for the renewal of registration by Karnataka Ayurveda and Unani Practitioners Board and Karnataka Council for Homeopathic Medicine. Professional and Technical support may be obtained from the teaching institutions (Both Private and Government).</i>	Constant upgrading of the knowledge and skills of the doctors.
18.18	<i>10 seats may be reserved in MBBS course in the Government Medical Colleges for eligible ISM&H graduates, 7 for Ayurveda, 2 for Homeopathy and 1 for Unani, to bring about integration.</i>	There is greater integration and possibility of research into the efficacy of different systems of medicine.
18.19	<i>All the teaching institutes of ISM&H must take up defined geographic areas in order to effectively execute</i>	Improved involvement of ISM&H in primary health care.

Sl.No.	Major Recommendations	Outcome expected
	<i>public awareness programmes and for primary health care (through the dispensaries and mobile units). The need for trained ISM&H health workers for extension work may be studied and action taken so that they can take up health promotion work in the villages.</i>	
18.20	<i>Introductory lessons on ISM&H systems viz., Ayurveda, Unani, Naturopathy, Yoga, Siddha and Homeopathy should be included in the curriculum of schools and colleges, which would create awareness among the children. The institutes of ISM&H should take up school health programmes in the neighbouring schools.</i>	Greater respect for all systems of medicine; improved health of school children.
18.21	<i>An expert committee may be appointed to consider the upgradation of the Government Pharmacy after studying TAMPCOL of Tamil Nadu or AUSHADHI of Kerala. A Homeopathic Drugs Manufacturing Unit may be started to make medicines in sufficient quantities to meet the demands of the entire state.</i>	Greater availability of quality medicines.
18.22	<i>To meet the increasing needs of ISM&H, a post of Assistant Drug Controller may be created and filled up by suitably qualified candidate Qualified homeopathic doctor may be appointed as drug inspector to inspect the Homoeopathic manufacturing units. The department of ISM&H must prepare essential drug lists for each system. A medicinal plant board may be established which would ensure quality, consistency and price.</i>	Quality assurance of the drugs under ISM&H.
18.23	<i>Encourage research. Appoint a Senior Research Officer in ISM&H. Reconstitute the research advisory committee. Rajiv Gandhi University of Health Sciences may be requested to establish interdisciplinary research board, comprising of experts of ISM&H, modern medicine and scientists of basic sciences. RGUHS may be requested to frame standard guidelines for protocols for thesis / dissertations for postgraduate courses in ISM&H. The financial support to PG researches may be enhanced to Rs.2,500/- p.a. Encourage research in ISMH through financial support</i>	Research in ISM&H is improved.

Sl.No.	Major Recommendations	Outcome expected
	<i>for interested and dedicated practitioners and private academic institutions.</i>	
18.24	<i>Government should provide about 50-100 acres of land for ISM&H in each district for cultivation of medicinal plants, which should be harvested and utilised by the Government Central Pharmacy.</i>	Improved availability of medical plants.
18.25	<i>The government should effect immediately the promotions that are due and implement time bound promotions</i>	Improved morale and better functioning of the department.
18.26	<i>Appoint a qualified person competent in editing / publishing to effectively bring out publications including health promotion materials</i>	Publications are brought out on time.
18.27	<i>Doctors qualified in particular system of medicine should practice only that system; cross practice must stop in the interest of the public and to develop the particular system of medicine.</i>	Doctors practise only that system in which they are competent.
18.28	<i>Have a comprehensive HMIS for all the institutions and services under ISM&H.</i>	Improved availability of information for better management.
	19. PANCHAYAT RAJ AND EMPOWERMENT OF THE PEOPLE	
19.1	<i>The involvement of the Panchayat institutions and of the community in providing health services should be encouraged for improvement and enhancement of these services based on real needs. For enhancing such involvement, information should be available to the community and a forum must be developed. It would also be necessary to sensitize the officials in this regard;</i>	Greater involvement in Panchayat Raj institutions and people for improved health services.
19.2	<i>Sec. 61 of the Karnataka Panchayat Raj Act may be amended to establish a separate Committee for health, sanitation and education in the Gram Panchayat;</i>	The committee concentrates its attention on health, sanitation and education.
19.3	<i>Training courses in health for empowering women members of the Panchayats and women community leaders need to be organized. Such empowerment would improve the effectiveness of programmes such as RCH, children's and women's health in the community;</i>	Improved involvement of women members in health and family welfare.

Sl.No.	Major Recommendations	Outcome expected
19.4	<i>Model health plans need to be formulated by the Panchayat institutions. Such model plans would assist in developing the health component of the District Development Plan;</i>	Improved health plans as part of Development Plan.
19.5	<p><i>The health hierarchy needs to be oriented regarding its role in the Panchayat system and its relationship with these bodies; monitoring of implementation of State funded activity, supervision and inspection continue to be a direct responsibility of the hierarchy;</i></p> <p><i>A system of monitoring the health activities of the ZPs by the Commissioner needs to be established;</i></p> <p><i>The Rural Development and Panchayat Raj Department and the Health Department may develop a system of feedback from the health hierarchies in order to render the mutual inter-active role between the Health Department and the Panchayat bodies more productive;</i></p> <p><i>It would be necessary to conduct orientation courses / workshops for the health hierarchy so that there is a better understanding of both their role and responsibility in the Panchayati Raj system. The Rural Development and Panchayati Raj Department could organize such courses.</i></p>	Better co-ordination between the department of Health and Family Welfare Services and the local authorities, with clear responsibility of the department in all technical matters.
19.7	<i>The meetings of the ZPs may be regulated according to the circulars of the Department of Rural Development and Panchayati Raj regarding frequency, so as to permit district health personnel, particularly the DHO, to carry out inspections and supervision more intensively;</i>	The DHOs can plan and implement their other activities effectively.
19.8	<p><i>Village communities should be encouraged to form Village Health Committees with wide membership, including representatives of women's groups, the youth, the ANMs, the Anganwadi Workers, and others. The Gram Panchayat is empowered to constitute such committees under Sec. 61 – A of the Act.</i></p> <p><i>These Village Health Committees would have to be trained in the conduct of meetings, prioritizing local health issues, preparation of health plans, etc. Institutions such as the Institute for Social and Economic Change could be assigned this function;</i></p> <p><i>The formulation of a pilot project for the formation of</i></p>	Greater involvement of the people in all health activities.

Sl.No.	Major Recommendations	Outcome expected
	<i>such Committees, developing necessary training material and sensitization could be assigned to the Institute for Social and Economic Change, Bangalore. The State Institute for Health and Family Welfare should also be involved in the process of sensitization of the official hierarchies.</i>	
	20. STRENGTHENING PARTNERSHIPS	
	PRIVATE / CORPORATE SECTOR, GENERAL PRACTITIONERS AND VOLUNTARY ORGANISATIONS	
20.1	<i>Enhance the scope/importance of collaboration with the private and voluntary sectors in primary, secondary and tertiary level of health care. Involve private sector in preventive and promotive care in addition to curative care. Promote partnership between public, private and voluntary organisation.</i>	Improved collaboration between public, voluntary and private sectors in all aspects of health care.
20.2	<i>Evaluate and monitor quality of services in the private and voluntary sectors.</i>	Quality assurance is a must which ever be the sector.
20.3	<i>NGO cell should be created directly under the Commissioner/DGHS and representatives of voluntary organisations working for the health sector should be members of it. The cell should register all organisations & bring out the annual report of the activities of voluntary organisations. The grant-in-aid procedures must be simplified and the bottlenecks removed, to help better collaboration and remove the feeling of frustration. The logistics of partnership concept between the government and voluntary organisation has to be worked out by the central cell and the government. Voluntary agencies should be invited to participate in the preparation of health policies by the Government.</i>	Co-ordination and credibility. Greater involvement of credible voluntary organisations in health and development.
20.4	<i>The agencies, have to be used more and more for the effective implementation of National Programmes, spread of health education & act as a watch-dog over the provision of health services within the public/private sectors.</i>	Better performance of the National and other programmes.

Sl.No.	Major Recommendations	Outcome expected
	21. MULTISECTORALITY AND INTERSECTORAL COORDINATION	
21.1	<i>The State must establish administrative machinery and Co-ordination committees at the State, district and local levels for intersectoral action for health. These groups must be involved in the preparation of the State plan. Have a High Power Core Committee (intersectoral) headed by the Chief Secretary at the state level and committees at the district level with participation by D.Cs and C.E.Os. The Committees should have representations from Health, Education, Women and Child Welfare, Agriculture, Horticulture, Animal Husbandry, Irrigation, Housing, Industry, Pollution Board and Environment. Subcommittees can be formed to reflect and take action on specific matters.</i>	Better collaboration between all health related sectors
21.2	<i>All developmental programmes must have inputs from the health sector to make use of the opportunity to improve health and prevent problems.</i>	Some development programmes might have adverse effects on health; these can be avoided by action during planning, and implementing.
	<i>Health personnel (Public Health) should be trained to anticipate and find solutions to possible health hazards of developmental programmes. They should continue their association during implementation, monitoring and evaluation of the programme.</i>	
	22. THE KARNATAKA STATE INTEGRATED HEALTH POLICY 2001	
22.1	<i>The draft integrated health policy should be adopted after dialogue with Directorate of Health and Family Welfare Services, other Government Departments and Public.</i>	Wide circulation and debates among all stakeholders can improve the policy and its implementation for better health for all.
22.2	<i>A Commission on Health would be constituted to provide policy inputs and expert guidance to the Directorate of Health Services.</i>	Enhancing responsiveness of health Services to meet current needs and expectations.

Annexures

ANNEXURE 1**ANNEXURE 1A****GOVERNMENT ORDER APPOINTING THE TASK FORCE****Proceedings of the Government of Karnataka****Sub:** Constitution of Task Force on Health and Family Welfare – reg.**Ref:** Note No SCM / 516 / 99, Dated 10-11-1999**PREAMBLE:**

In order to propose measures to improve the public health care system in the State of Karnataka, it has been felt necessary to set up a Task Force, consisting of eminent persons in various fields, which would examine the issues involved and propose measures which could be adopted by Government.

Hence the following order.

Government Order No. HFW 545 CGM 99, Bangalore, Dated 14-12-1999

A Task Force on Health and Family Welfare is hereby set up consisting of the following persons:

- | | | |
|-----|---|-----------------|
| 1. | Dr. H. Sudarshan, Karuna Trust, B.R. Hills | Chairman |
| 2. | Sri P. Padmanabha, Former Registrar General, India | Member |
| 3. | Dr. Chandrashekar Shetty, Vice Chancellor, Rajiv Gandhi University of Health Sciences | Member |
| 4. | President, Indian Medical Association, Karnataka Branch | Member |
| 5. | Dr. Jacob John, C.M.C., Vellore | Member |
| 6. | Dr. C. M. Francis, Bangalore | Member |
| 7. | Dr. S. Nagalotimutt, Rtd. Director, Karnataka Institute of Medical Sciences (KIMS), Hubli | Member |
| 8. | Dr. Latha Jagannathan, T.T.K. Blood Bank, Bangalore. | Member |
| 9. | Dr. Jayaprakash Narayan, M.D. (Ayurveda), Bangalore | Member |
| 10. | Swami Japananda, Chairman, Swami Vivekananda Integrated Rural Health Centre, Pavagada, Tumkur | Member |
| 11. | Dr. M. Maiya, Physician, Bangalore | Member |
| 12. | Dr. S. Subramanya, Project Administrator, Karnataka Health Systems Development Project | Member Convener |

The following shall be the Terms of Reference of the Committee:

1. The Task Force shall propose to the Government various policy measures to be adopted for improving the public health care system in the State.
2. The Task Force shall propose measures to stabilize the population at a Net Reproductive Rate of 1 and suggest the time frame by which this should be achieved.

3. The Task Force shall also make recommendations regarding improvements necessary in the management and administration of the Department of Health and Family Welfare for this purpose.
4. The Task Force shall also recommend changes in the education system covering both clinical and public health areas keeping in view the improvements envisaged above.
5. The Task Force shall not only make recommendations with regard to the above issues but is also expected to monitor the impact of the recommendations especially in the initial stages of implementation. Hence the Task Force may set out specific outcomes to be achieved by the Department of Health and Family Welfare after the implementation of the recommendations.

The terms and conditions regarding the sitting fees, etc. are at Annexure-I to this order.

By order and in the name of the
Governor of Karnataka

Sd/-

(SIDDALINGAIAH)

Under Secretary to Government
Health & Family Welfare Department

To,

1. Dr. H. Sudarshan, Karuna Trust, B.R. Hills
2. Sri P. Padmanabha, Former Registrar General, India
3. Dr. Chandrashekar Shetty, Vice Chancellor, Rajiv Gandhi University of Health Sciences
4. President, Indian Medical Association, Karnataka Branch
5. Dr. Jacob John, C.M.C., Vellore
6. Dr. C.M. Francis, Bangalore
7. Dr. S. Nagalotimutt, Rtd. Director, Karnataka Institute of Medical Sciences (KIMS), Hubli
8. The Accountant General in Karnataka, Bangalore
9. The Commissioner, Health & Family Welfare, Bangalore
10. The Director, Health & Family Welfare, Bangalore
11. Dr. Latha Jagannathan, T.T.K. Blood Bank, Bangalore
12. Dr. Jayaprakash Narayan, M.D, (Ayurveda), Bangalore
13. Swami Japananda, Chairman, Swami Vivekananda Integrated Rural Health Centre, Pavagada, Tumkur
14. Dr. M. Maiya, Physician, Bangalore
15. Dr. S. Subramanya, Project Administrator, Karnataka Health Systems Development Project

Copy to:

1. P.A. to Principal Secretary to the Government, Health & Family Welfare Department
2. P.A. to the Deputy Secretary (H), Health & Family Welfare Department

ANNEXURE 1B**PROCEEDINGS OF THE GOVERNMENT OF KARNATAKA****Sub:** Constitution of Task Force on Health and Family Welfare – Nomination of additional Members**Read:** G.O. NO. HFW 545 CGM 99 dt. 14.12.99**PREAMBLE:**

In order to propose measures to improve the public health care system in the State, a Task Force has been constituted vide Government order referred above.

It has been considered necessary to include some more members in the Task Force to represent their respective fields. Hence, the following order.

GOVT.ORDER NO.HFW 545 CGM 99 BANGALORE DT.20.1.2000

In continuation of constitution of Task Force vide Govt. order dt. 14.12.1999, the following additional members are nominated as against their names.

- | | | |
|----|--|--------|
| 1. | Dr. Kamini Rao, Gynaecologist | Member |
| 2. | Dr. Thelma Narayan, Community Cell,
A Health Policy NGO | Member |

The terms and conditions regarding the sitting fees etc., are at Annexure – I of Govt. order dt. 14.12.99 remains the same.

By order and in the name of the
Governor of Karnataka
Sd/-
(SIDDALINGAIAH)
Under Secretary to Government
Health & Family Welfare Department

To

1. Dr. H. Sudarshan, Vivekananda Girijana Kalyana Kendra (Karuna Trust) B.R. Hills-571 441, Yelandur Taluk, Chamarajanagar District
2. Dr. S. Subramanya, Project Administrator, Karnataka Health Systems Development Project, Seshadri Road, Bangalore – 560 001
3. The concerned (through Member Convener, Task Force, Project Administrator, KHSDP, Seshadri Road, Bangalore – 560 001.
4. The Secretary to the Chief Minister

Copy to:

1. P.S. to Principal Secretary
2. P.A to P.S-1 & 2

ANNEXURE 1C**PROCEEDINGS OF THE GOVERNMENT OF KARNATAKA**

Sub: Constitution of Task Force on Health and Family Welfare, reg.

Read: 1) G.O. NO. HFW 545 CGM 99 dt. 14.12.99 and 20.1.2000
2) Notification No. DFAR 133 CAS 2000 dt. 6.3.2000

PREAMBLE:

In the Government order read at (1) above, sanction was accorded to set up a Task Force on HFW Department consisting of 12 eminent persons and with Dr. S. Subramanya, Project Administrator, KHSDP, Bangalore as Member Convener.

In the Notification read at (2) above on returning from leave Dr. S. Subramanya is transferred and appointed as Secretary to Government (Mines, SSI & Textiles) Commerce and Industries Department, Bangalore and Sri. Arvind G Risbud is appointed as Project Administrator, Karnataka Health System Development Project and Special Secretary to Government, Health & Family Welfare Department, Bangalore, vice Dr. S. Subramanya IAS transferred.

Now, it is considered necessary to appoint / nominate Sri Arvind G Risbud as Member Convener of above said Task Force with immediate effect and until further orders.

GOVERNMENT ORDER NO. HFW 545 CGM 99, BANGALORE Dt. 16.3.2000

In the circumstances explained above, Government is pleased to nominate The Project Administrator, Karnataka Health System Development Project and Special Secretary to Government, Health and Family Welfare Services Department as Member Convener of Task force on Health & Family Welfare Department, with immediate effect and until further orders.

The other conditions mentioned in the said Government Order shall remain unaltered.

By order and in the name of the
Governor of Karnataka
Sd/-

(SIDDALINGAIAH)
Under Secretary to Government
Health & Family Welfare Department

To:

1. Dr. H. Sudarshan, Karuna Trust, B.R. Hills
2. Sri P. Padmanabha, Former Registrar General, India
3. Dr. Chandrashekar Shetty, Vice Chancellor, Rajiv Gandhi University of Health Sciences, Bangalore.
4. President, Indian Medical Association, Karnataka Branch
5. Dr. Jacob John, C.M.C., Vellore
6. Dr. C. M. Francis, Bangalore
7. Dr. S. Nagalotimath Rtd. Director, Karnataka Institute of Medical Sciences (KIMS), Hubli

8. The Accountant General in Karnataka, Bangalore
9. The Commissioner, Health & Family Welfare, Bangalore
10. The Director, Health & Family Welfare, Bangalore
11. Dr. Latha Jagannathan, T.T. K. Blood Bank, Bangalore
12. Dr. Jayaprakash Narayan, M.D. (Ayurveda), Bangalore
13. Swami Japananda, Chairman, Swami Vivekananda Integrated Rural Health Centre. Pavagada, Tumkur
14. Dr. M. Maiya, Physician, Bangalore
15. Dr.S.Subramanya, Project Administrator, Karnataka Health Systems Development Project, Seshadri Road, Bangalore.

Copy to:

1. P.S to Principal Secretary to the Govt. HFW Dept.
2. P.A. to DS-I-II, HFW Dept.

ANNEXURE 2

**SCHEDULES OF THE MEETINGS OF THE
TASK FORCE ON HEALTH AND FAMILY WELFARE**

SL NO.	MONTH	YEAR	DATES
1.	December	1999	21st
2.	January	2000	3rd, 4th, 5th, 10th, 11th, 12th, 27th, 28th, 29th
3.	February	2000	8th, 14th, 15th, 16th, 21st, 25th, 28th, 29th
4.	March	2000	1st, 6th, 7th, 8th, 11th, 13th, 20th
5.	April	2000	6th, 8th, 19th, 24th, 26th
6.	May	2000	8th, 13th, 27th,
7.	June	2000	20th
8.	July	2000	18th,
9.	August	2000	23rd
10.	September	2000	25th
11.	October	2000	23rd
12.	November	2000	15th, 20th, 28th
13.	December	2000	13th, 14th
14.	January	2001	9th, 22nd, 23rd, 29th
15.	February	2001	7th, 14th, 20th, 21st, 26th, 27th, 28th
16.	March	2001	5th, 8th, 13th, 21st, 27th

Total = 59 working days

Sub Group Meetings

1. Task Force Sub-Committee meeting on HIV/AIDS- 24th August 2000
2. Task Force Sub-Committee meeting on Cancer- 24th August 2000
3. Task Force Sub-Committee meeting on PHC- 11th August and 29th Sept. 2000

ANNEXURE 3

SUBGROUPS AND TEAM MEMBERS

1	Equity in Health Care	Dr. C.M. Francis
1.1	Regional disparities: Health status; Infrastructure & Human Resources	
1.2	Gender disparities	
1.3	Socio economic (Caste and Class) disparities	
2	Quality of Health Care	Dr. C.M. Francis
2.1	Standards	
2.2	Quality Assurance	
2.3	Accreditation	
3	Primary Health Care	Dr. C.M. Francis
3.1	Rural health	
3.2	Urban Health	
3.3	Referral Services	
4	Secondary and Tertiary Health Care	Dr. C.M. Francis
4.1	Secondary / Tertiary Hospitals	Dr. C.M. Francis
4.2	Emergency Health Services	Dr. C.M. Francis
4.3	Diagnostic Services	Dr. T. Jacob John / Dr. M. Maiya
4.4	Blood Banking & Transfusion Services	Dr. Latha Jagannathan
4.5	Bio-Safety	Dr. Latha Jagannathan / Dr.B.S. Ramesh
5	Public Health	Dr. Thelma Narayan
5.1	Public Health and Primary Health Care - Synergy	Dr. Thelma Narayan
5.2	Water Supply & Sanitation	Dr. Thelma Narayan
5.3	Pollution & Solid Waste Management	Dr. Latha Jagannathan/Dr.N. Girish
5.4	Communicable Diseases	Dr. T. Jacob John
5.4.1	Vector borne diseases – Malaria, Filariasis, Kyasanoor Forest Disease (KFD), Dengue and Japanese encephalitis (JE)	Dr. T. Jacob John / Dr. Deepak M.G.
5.4.2	Tuberculosis	Dr. T. Jacob John / Swami Japananda / Dr. Thelma Narayan
5.4.3	Vaccine Preventable Diseases	Dr. T. Jacob John
5.4.4	Food and Water borne diseases	Dr. T. Jacob John

5.4.5	RTI, HIV/ AIDS & STDs	Dr. Latha Jagannathan
5.4.6	Leprosy	Dr. T. Jacob John
5.4.7	Rabies	Dr. T. Jacob John
5.4.8	Other infectiour diseases	Dr. T. Jacob John
5.5	Disease Surveillance	Dr. T. Jacob John
5.6	Non Communicable Diseases	Dr. M. Maiya / Dr. B.S. Ramesh
5.6.1	Diabetes Mellitus	
5.6.2	Cardiovascular diseases	
5.6.3	Bronchitis & Asthma	
5.6.4	Cancer Control	
5.6.5	Other Non-communicable diseases:	
5.7	Oral Health	Dr. M. Maiya / Dr. B.S. Ramesh
5.8	Occupational Health	Dr. B.S. Ramesh / Dr. C.M. Francis
5.9	Blindness control	Dr. Chandrashekar Shetty / Sri Swami Japananda
5.10	Tobacco Contorl	Dr. C.M. Francis / Dr. Latha Jagannathan
5.11	Alcohol and Helath	Dr. Latha Jagannathan / Dr. C.M. Francis
5.12	Health aspects of Disaster Management	Dr. T. Jacob John
6	Mental Health & Neurosciences	Dr. C.M. Francis
6.1	Mental Health	Dr. C.M. Francis / Dr. Sreenivasmurthy
6.2	Neurological disorders	Dr. M. Maiya
6.2.1	Epilepsy	
6.2.2	Stroke	
6.2.3	Neurology and Neurosurgery services in Government Medical Colleges	
6.2.4	Head injuries and traffic accidents	
7	Nutrition	Dr. C.M. Francis
7.1	Vulnerable groups	
7.2	Integrated Child Development Services	
7.3	Public Distribution System (PDS)	
8	Women & Child Health	Dr. Latha Jagannathan
8.1	Women's Health	
8.2	Child Health	Dr. Jacob John
8.3	Reproductive & Child Health Programme	Dr. Kamini Rao

9 Population Stabilization**10 Focus on Special groups**

10.1 Persons with disability

10.2 Health of the Tribal People

10.3 Health of the elderly

11 Health Promotion and Advocacy for Health

11.1 Health education (IEC)

11.2 Health promotion in schools

11.3 Advocacy

12 Human Resources Development for Health

12.1 Education

12.2 Training

12.3 Continuing Education

13 Research**14 Health Systems Management**

14.1 Administration

14.2 Planning and Monitoring

14.3 Health Management Information System (HMIS)

15 Health Financing

16.1 Allocations and Expenditure

16.2 External Aid

16.3 Management Structure

16.4 Budget Planning and Control

16.5 Information for Health Financing

16.6 Community Financing and Insurance

16 Rational Drug Management**17 Law & Ethics**

17.1 General

17.2 Quackery

17.3 Ethics

Mr. Padmanabha

Dr. C.M. Francis

Dr. H. Sudarshan / Dr. Deepak M.G.

Mr. P. Padmanabha

Dr. C.M. Francis**Dr. Chandrashekar Shetty /
Dr. C.M. Francis**

Dr. C.M. Francis/Dr.Hrishikeshavam

Mr. P. Padmanabha

Dr. Latha Jagannathan

Mr. Padmanabha**Dr. C.M. Francis / Dr. H. Sudarshan
/ Dr. Deepak M. G. / Ms. Sunitha
Srinivasan****Dr. C.M. Francis**

18	Indian Systems of Medicine and Homoeopathy	Dr. Jayaprakash Narayan
18.1	Department of ISM&H	
18.2	Medical Education	
18.3	Drug Controller	
18.4	Problems	
18.5	Folk and Traditional Medicine	
18.6	Other healing practices	Dr. Thelma Narayan / Dr. C.M.Francis
19	Panchayat Raj and Empowerment of People	Mr. Padmanabha
20	Strengthening Partnerships	Dr. M. Maiya
20.1	Private and Corporate Hospitals	
20.2	General practitioners	Dr. B.S. Ramesh
20.3	Voluntary Organisations	
21	Multisectorality and Intersectoral Coordination	Dr. C. M. Francis
22	The Karnataka State Integrated Health Policy 2001	Dr. Thelma Narayan
23	Vision 2020	Dr. C.M. Francis
24	Implementation of the Recommendations of the Report	Dr. C.M. Francis
25	Major recommendations and expected outcome	Dr. C.M. Francis

ANNEXURE - 4**LIST OF RESEARCH STUDIES CONDUCTED BY THE TASK FORCE***

1. **Proposal for Review of Organisation Structure and Design of Job Responsibilities for Health and Family Welfare Department.**
— Dr. Kishore Murthy, Advisor Health, A.F. Ferguson & Co.
2. **Review of Externally Aided Projects in the context of their integration into the Health Services Delivery in Karnataka.**
— Dr. Ravi Narayan, Community Health Advisor, Community Health Cell
3. **Training Programmes for Health Personnel in Government Service in Karnataka – A Review Proposal.**
— Dr. Pankaj Mehta, Director, Medical Education, Manipal Hospital
4. **Public Health Care Services under Panchayat Raj System in Karnataka: A Review**
— Dr. Ramesh Kanbargi, Director, Centre for Social Development
5. **Disparities in Health and Health care Services**
— Mr. As Mohammed, Prof. of Statistics, St. Johns Medical College
6. **Proposal for Review of Role of Private Sector in Health Services (Access and Quality).**
— Dr. Kishore Murthy, Advisor Health, A.F. Ferguson & Co.
7. **Health Expenditures in the State Budget**
— Dr. Vinod Vyasulu, Director, Centre for Budget and Policy Studies
8. **Peoples Perceptions of Public Health Care Services and Indigenous System in Karnataka**
— Dr. Ramesh Kanbargi, Director, Centre for Social Development
9. **Research Study on the Feasibility and Modalities of application of principles of Health Promotion and its integration with Health Education.**
— Dr. K.Basappa, President, Karnataka Chapter, International Union for Health Promotion and Education

* The research studies were conducted in collaboration with Karnataka Health Systems Development Project.

ANNEXURE 5

List of Individuals /Organisations/ Associations who interacted with the Task Force

I. Ministry of Health, Government of Karnataka

1. Dr. Maalaka Raddy, Honourable Minister of Health and Family Welfare
2. Smt. Nafees Fazal, Honourable Minister of State for Medical Education
3. Sri Abhijit Sen Gupta, IAS Formerly Principal Secretary,
4. Sri A K M Naik IAS, Principal Secretary
5. Sri Sanjay Kaul, IAS Health Commissioner
6. Sri Jyothi Ramalingam, IAS Formerly Medical Education Secretary
7. Sri. Thangaraj D, IAS Medical Education Secretary
8. Dr. Subramanya S, IAS Formerly Project Administrator, KHSDP
9. Sri Arvind G Risbud, IAS Project Administrator, KHSDP
10. Sri Shivasailam, IAS Formerly Project Director, IPP IX
11. Sri. Sadashiviah, IAS Formerly Project Director, IPP IX
12. Sri G.V.K. Rao IAS Project Director, IPP IX
13. Prof. B.K. Chandrashekar, Hon.Minister for Information, Bangalore.
14. Sri. Gautam Basu, Joint Sector (RCH), Ministry of H & FW, Govt. of India, New Delhi.

II. DIRECTORATE**A. Health and Family Welfare Services:**

1. Dr. P N Halagi, Director of Health and Family Welfare,
2. Dr. Seetha Lakshmi, Director of Medical Education, Directorate of H&FWS
3. Dr. Dr. G.V. Nagaraj, Director, Health & Family Welfare Services
4. Dr. Makapur, Director, State Institute of Health and Family Welfare
5. Dr. Shivaratna Savadi, Formerly Director of Medical Education
6. Dr. Nagaraj G V, Project Director, RCH
7. Dr. Murugendrappa, Additional Director (CMD), Dir of H&FWS, Bangalore.
8. Dr. Kurthkoti, Additional Director, Health Education and Training
9. Mr. B. Guruswamy, Director, ISM&H
10. Dr. K. Sharadamma, Additional Director (SPC), KHSDP
11. Dr. Bhattacharjee, Director, Population Centre
12. Dr. Kumaraswamy, Joint Director, Ophthalmology
13. Dr. Janguay, Joint Director, Leprosy
14. Dr. H.G. Narayana Murthy, Joint Director, Tuberculosis
15. Dr. Jayadev, Joint Director, HET
16. Dr. Jalaja Sundaram, Joint Director, Nutrition
17. Smt. H.S. Susheela, Joint Director (IEC)
18. Sri Prakasham, Joint Director, Demography
19. Dr.V. S. Rajamma (HMIS), Deputy Director, KHSDP
20. Dr. B.Y. Nagaraj, Joint Director (Lab), PHI Building
21. Dr. K R Kamath, Deputy director, PHI
22. Dr. M. Dhananjaya Reddy (CMD), Deputy Director
23. All the District Health Officers
24. All District Surgeons
25. Dr. D.M. Koradhanyamath, Training Officer, IPP-IX
26. Shri P. Mahadev, Asst. Leprosy Officer,
27. Smt. D. R. Jayashri, Systems Analyst,
28. Sri Veeranna, Assistant Director, Nursing Services

29. Dr.M. Mallikarjunaiah, Deputy Director (Medical), Directorate of H&FWS
30. Dr.K.P. Damodar, Chief Supervisor, Govt. Medical Stores, Bangalore.
31. Dr.B.Y. Nagaraj, Joint Director (Lab), Bangalore.
32. Mr. D.S.Murali Krishna, Deputy Secretary, Health & Family Welfare Dept. Bangalore.
33. Dr. M. Mallikarjunaiah, Deputy Director (Medical), Directorate of H &FWS, B'lore.
34. Mr. M.E. Shivalingaiah, CAO, Dir of H&FWS, Bangalore.
35. Dr. P.K. Srinivas, District Malaria Officer, Mysore.
36. Dr. G.B. Desai, Director, State Institute of Health & Family Welfare, Bangalore.
37. Dr. C.S. Siddegowda, Additional Director (PHC), Dir of H&FWS, Bangalore.
38. Dr. Thimmaiah, Additional Director (AIDS), Dir of H&FWS, Bangalore.
39. Dr. A.S. Thambakad, Joint Director (GMS), Dir of H&FWS, Bangalore.
40. Dr. N.D. Mukunda, Joint Director (IPP), Dir of H&FWS, Bangalore.
41. Dr. Chandrashekar Naik, Joint Director (AIDS), Dir of H&FWS, Bangalore.
42. Dr. Rama Jayaram, Joint Director (H&P), Dir of H&FWS, Bangalore.
43. Dr. Dhanya Kumar, Deputy Director, KHSDP
44. Dr. Rajamma. V. S, Deputy Director, KHSDP.
45. Prof C. V. Nagaraj, Officer on Special Duty, SPC, KHSDP.
46. Dr. Vishwaradya, Deputy director (Equipment), KHSDP.

B. Indian Systems of Medicine and Homoeopathy

47. Dr. S M Angadi, Director of Indian Systems of Medicine,
48. Dr. Malini, Principal, Government Ayurvedic College,
49. Dr. Prakash, Principal, Government Homeopathic Medical College
50. Mr. B. Guru Swamy, Director, ISM&H, Bangalore.
51. Dr. Sangamesh Kalahal, Medical Officer, Govt. Ayurvedic Dispensary, Kinnal, Koppal District.
52. Dr.G.B. Patil, Principal, DGM Ayurvedic Medical College, Gadag.
53. Dr. Mohammad Rafi H. Hakeem, Physician, GR-II, G.A.D., Chitiwadgi, Bagalkot District.
54. Dr.K.C. Ballal, Member, K.A.G.P. Board, Bangalore.

C. Drugs Control Department

55. Dr. Ananada Rajashekar, Drugs Controller
56. Mr. Prabha Chandra, Deputy Drugs Controller
57. The Chief Pharmacist, Government Medical Stores
58. Dr. K.P. Damodar, Chief Supervisor, Govt. Medical Stores, Bangalore

III. Bangalore Mahanagara Palike

1. Dr. Siddegowda, Health Officer, Bangalore Mahanagara Palike
2. Dr. M. Jayachandra Rao, Project Director, IPP 8
3. Dr. Mala Ramachandran, Programme Officer (Health and Administration), IPP8

IV. Professional Bodies

1. Dr. Chikkananjappa, Karnataka Medical Council
2. Dr. K B Naggor, Dr. Hanumegowda, Karnataka Council for Indian Systems of Medicine and Homeopathy
3. Smt. Sunitha Srinivas, Deputy Director, Drug Information Centre, Pharmacy Council
4. Dr.V. Brahmacharya, President, Homeopathic Board
5. Representative, Karnataka Dental Council
6. Dr. Sheela Bhanumathy, Dr V C Shanmuganandan, Indian Medical Association
7. Dr. Mallikarjunaiah, Dr. Shantaraj, Dr. Hanumanthrayappa, Karnataka Government Medical Officers Association
8. Dr. Shivananda, Dr. R Chandrashekara, Dr. Narasimhaswamy K R, Karnataka Government Medical and Dental Teachers Association
9. Dr. C. Muralidhar, President, Ayurvedic Physicians Association

10. Dr. K.C. Ballal, Dr. C. Muralidhar, Dr. K.V. Joshi, Dr. L.K. Rauannavar, Dr. J. Aprameya raman and Dr. Padmanabha, Integrated Medicine Practitioners Association
11. Dr. Nityananda, Dr. Srinivas D R, Junior Doctors Association
12. Dr. Malikarjuna R, Dr. Veerabhadraiah, Dr. Sanath Kumar, Dr. Ravishankar, Karnataka Government Contract Doctors Association

V. Voluntary Organisations

1. Dr. Jayashree Ramakrishna, AIDS Forum Karnataka
2. Smt. Neerajakshi T, Voluntary Health Association of Karnataka
3. R. Balasubrammaniam, Swami Vivekananda Youth Movement
4. G. Mallappa, Folk Practitioner
5. Dr. Shobha Yohan, Christian Medical Association of India, Karnataka
6. Sr. Elise Mary, Catholic Health Association of India, Karnataka
7. Dr. Ravi Narayan, Community Health Cell
8. Sri Jayakumar Anagol, SOSVA
9. Sri Auxin Thomas, FEVORD (K)
10. Dr. Pruthvish, Action Aid, Bangalore.
11. Dr. Chapel Khasnabis, Mobility India, Bangalore.
12. Smt. Indumati Rao, CBR Network, Bangalore.
13. Dr. Sangamitra Iyengar, Project Officer, SAMRAKSHA, Bangalore.
14. Mr. Ashok Rao, Freedom Foundation, Bangalore.
15. Mr. Elango, KNP+, Bangalore
16. Dr. Glory Alexander, Asha Foundation, Bangalore
17. Dr. James Parayil Joseph, CHC, Bangalore.
18. Mr. Vinay Kulkarn, PRAYAS, Pune
19. Ms. Jayashree Kotvale, NGO Advisor, KSAPS
20. Dr. Sampath K. Krishnan, Policy Fellow, CHC, Bangalore.

VI. National Institutes and Premier Institutions

1. Mrs. Dr. Jogota The Director National Tuberculosis Institute
2. Dr. Mohan Issac, Prof & Head, Dept. of Psychiatry
3. Dr. Shastry, Neuro Surgeon & HOD of Neuro Surgery, NIMHANS
4. Dr. Nagaraj C, Regional Office of Health and Family Welfare
5. Dr. H. R. Raj Mohan, In-Charge Director, Regional Occupational Health Centre.
6. Dr Raju and Dr Rayappa, Institute of Social and Economic Change,
7. Dr. Shymal Biswas, I/c, Director National Institute of Communicable Disease
8. Dr. Prasanna, The Office-in-Charge, National Institute of Virology
9. Dr. Ghosh, The Regional Director, Malaria Research Centre
10. Dr. Nanda Kumar, Project Officer, National Cancer Registration Prg

VII. Outside the health Sector

1. Sri M Jothi, Director, Department of Agriculture
2. Sri Krishna Kumar IAS, Principal Secretary, Urban Development
3. Sri G V K Rao IAS, Food and Civil Supplies
4. Smt Meera Saxena IAS, Women and Child Development
5. Smt Anita Kaul, IAS, Education
6. Sri Ganjigatti, Member secretary, Karnataka State Pollution Control Board
7. Dr. Sharma, Regional Director, Central Pollution Control Board
8. Sri Krishna Murthy. H.V, Song and Drama Division, Government of India
9. The Director, Information & the, Secretary Information, Bangalore.
10. The Chairman, Tax Reforms Commission, Bangalore.
11. The Secretary and Members of Tax Reforms Commission, Bangalore.

12. Sr. Sreenivasamurthy, Secretary, Rural Development & Panchayati Raj, Govt. of Karnataka, Bangalore.
13. Sri. R.K. Raju, CEO, B'lore Rural Zill Panchayat.
14. Sri. Kariyamma, MLA and Chairman, Scheduled Castes and Scheduled Tribes Welfare Committees.

VIII. Interaction with Press

1. Sri Chennakrishna, Reporter, Samyukta Karnataka
2. Sri. G.D. Yatish Kumar, Reporter, Prajavani
3. Sri. P.K. Lenis, Janavahini
4. Sri. B. S. Satish Kumar, Deccan Herald
5. Reporter, Asian Age
6. Smt. Padmini, The Hindu
7. Sri B N Chandrakumar, Programme Officer, Doordarshan Kendra

IX. Health Organisations

1. Sri G.S. Bhatt, Family Planning Association of India, Mysore
2. Mr. Raj Mathur, Family Planning Association of India, Bangalore
3. Mrs. Subhadra Venkatappa, Family Planning Association of India, Bangalore
4. Mr. Muniswamy, Family Planning Association of India-Bangalore

X. Citizens / Consumer Groups

1. Mr. Leo Saldhana, Environment Support Group
2. Ms Vijaya, CIVIC
3. Mrs Anjana Iyer, Mr. Govardhan and Mrs Sheela Prema Kumar, SWABHIMANA.
4. Mr. Surya Shetty, Mangalore Parisarasaktha Okkuta
5. Y.G. Muralidhar, Consumer Rights Education and Awareness Trust.
6. Dr. Sulata Shenoy, Jayanagar, Bangalore.

XI. Women's Group

1. Ms Ruth Manorama and Mrs Shan Taj, National Alliance of Women, Women's Voice
2. Mrs. Prema David, Ms Padma Priya, Vimochana
3. Mr. Vimalanathan, NESAI
4. Mrs. Anitha Reddy, AVAS

XII. Peoples Organisations

1. Sri Sridhar and Sri Basavaraju, Bharatiya Gnana Vignana Samiti

XIII. Corporate Bodies

1. Mr. Tallam Venkatesh, Federation of Karnataka Chamber of Commerce and Industry
2. Dr. Subbaswami and Sri Jatish N. Sheth, Karnataka Drugs Pharmaceuticals Manufactures Association
3. Ms. Manjusha Nair, A.F. Ferguson & Co.
4. Mr. K.M. Prabhu, A.F. Ferguson & Co.
5. Mr. Ramaditya, A.F. Ferguson & Co.
6. Dr. Satish, WOCKHARDT Hospital, Bangalore.
7. Dr. Kishore Murthy, Advisory Health, A.F. Ferguson & Co.

XIV. Voluntary, Private and Corporate Hospitals

1. Dr. Pankaj Mehta, Manipal Hospital, Bangalore
2. Dr. K.S. Shekar and Dr. Shiva Prasad, Bangalore Hospital, Bangalore
3. Dr. Devi Shetty and team, Manipal Heart Foundation, Bangalore
4. Dr. Diwakar and Dr. Hema Diwakar, Diwakar's Hospital, Bangalore

5. Sri P.K. Davison, WOCKHARDT Hospital, Bangalore
6. Dr. P.R. Desai, Dr. Chikkananjappa, Association of Private Hospitals and Nursing Homes, Karnataka.
7. Dr. Nandini Mundkur and Sri S Akbar Basha, Bangalore Childrens Hospital and Research Centre
8. Dr. B.S. Srinath, Bangalore Institute of Oncology.
9. Dr. Anil Thomas, Bharath Charitable Cancer Hospital, Mysore.

XV. Teaching Hospitals

1. Dr. M.R. Sandhya Belwadi, M S Ramaiah Medical Teaching Hospital, Bangalore
2. Dr. Chikka Moga, Victoria Hospital
3. Dr. Chandramma, Bowring and Lady Curzon Hospital
4. Dr. Anil Hegde, St. John's Medical College, Bangalore.
5. Dr. T. Murali, Head, Dept. of Rehabilitation, NIMHANS, Bangalore.
6. Dr. Shylaja Nikam, Director, All India Institute of Speech & Hearing, Manasa Gangothri, Mysore.
7. Dr. N. Janaki Ramaiah, Prof. of Psychiatry, NIMHANS.
8. Dr. Vivek Benegal, Associate Prof. of Psychiatry, NIMHANS.
9. Dr. Prathima Murthy, Associate Professor, Dept. of Psychiatry, NIMHANS.
10. Dr. Sreenivas Murthy, Associate Prof. Dept. of Psychiatry, NIMHANS.
11. Dr. P.S. Prabhakaran, Director, KIDWAI Memorial Institute of Oncology, Bangalore.
12. Prof G. Kilara, Curie Institute of Oncology, St. John's Medical College Hospital, Campus, Bangalore.
13. Dr. V. Ravi, HOD, Department of Virology, NIMHANS
14. Dr. Jayashree Ramakrishna, Department of Health Education, NIMHANS.
15. Dr. Reynold G. Washington, Associate Professor, Department of Community Health, St. John's Medical College.
16. Dr. M.K. Sudarshan, HOD of Community Medicine, KIMS, Bangalore.
17. Dr. Dara Amar, Prof. & HOD of Community Health, St. John's Medical College Hospital, Campus, Bangalore.
18. Dr. Nagesh, Principal, R.V. Dental College, Bangalore.
19. Sr. Annie Marie, Principal, College of Nursing, St. Martha's Hospital, Bangalore.
20. Dr. Padma Rao, Kasturba Medical College, Manipal.

XVI. Autonomous Hospitals

1. Dr. Ballal, Sanjay Gandhi Accident Relief and Rehabilitation Center
2. Dr. Benakappa, Indira Gandhi Institute of Child Health

XVII. World Bank

1. Mr. Chris Lovelace, Director, Health Nutrition Population, Human Development Network,
2. Ms. Hnin Hnin Pyne, World Bank.
3. Dr. David Peters, Member, World Bank.

XVIII. Invited Guests / Experts

4. Dr. Phadke, St. John's Medical College Hospital, FORTE
5. Dr. Philip Thomas, St. John's Medical College Hospital, FORTE
6. Dr. Venkatesh, Bangalore Kidney Foundation.
7. Sri. D.K. Bhatt, Consultant Health System Management
8. Sri. P.V. Bhat, Principal System Analyst: Smt. K. Padmavathi, Secretary Systems Analyst, National Informatics Centre
9. Sri Manjot Deol, Manager. Sri S Mani, Business Manager: Sri Sanjeev, Vice President, Wipro GE Medical System
10. Justice D.M. Chandrashekar
11. Dr. Hema Reddy, Formerly Director of Health Services
12. Dr. Vinod Vyasulu and Dr. Indira, Centre for Budget and Policy Studies
13. Dr. Sathyanarayana, Centre for Symbiosis of Technology, Environment and Management
14. Dr. Darshan Shankar, Foundation for Revitalisation of Local Health Tradition
15. Dr. R.M. Varma, Consultant Neuro Surgeon

16. Dr. R L Kapoor, Consultant Psychologist
17. Sri P G R Sindhia, MLA and Formerly Health Minister of Karnataka
18. Sri Suryanarayana Rao, Trade Union Leader, CPI (M)
19. Sri Nagaraj G.N., Secretariat member, CPI (M).
20. Dr. N.H. Aptia, The Foundation for Research in Community Health, Pune
21. Dr. Rajaratnam Abel, RUSHA, Christian Medical College and Hospital, Tamil Nadu
22. Dr. Muraleedharan, Indian Institute of Technology, Chennai
23. Dr. Sridhar, SEWA, Wardha
24. Dr. Almas Ali, Project Officer, South Asia Poverty Alleviation Programme, UNDP
25. Sri Srinivasan, Formerly Health Secretary, Government of India
26. Dr. S.K. Chaturvedi and Sri Sudha Murali, UNICEF.
27. Dr. Alok Mukyopadhyay, Voluntary Health Association of India.
28. Mr. V. Shantappa, Director, CESC
29. Dr. K.N.B. Raghavesh, CESC
30. Mr. Dharmapuri Vidyasagar, M.D. Director of Neonatology, Prof. of Pediatrics, University of Illinois, Chicago.
31. Mrs. Archana Dutta, Deputy Director, Directorate of Field Publicity, Regional Office (Karnataka).
32. Dr. B.C. Rao, Family Physician, Bangalore.
33. Ms. Sunitha Srinivas, KSPC, Bangalore.
34. Sri Chaluvayaswamy N, Member, Karnataka Legislative Assembly, Nagamangala.
35. Sri Chikkamada Nayaka, Member, Karnataka Legislative Assembly, Bannur.
36. Sri. Neelakantha Rao Deshmukh Garmpathi, President, Zilla Panchayat, Gulbarga.
37. Dr. K.S. Mani, Epileptologist, Bangalore.
38. Dr. Munichoodappa.C, Consultant Diabetologist, Bangalore.
39. Dr. Parameshwara V, Consultant Physician and Cardiologist, Bangalore.
40. Dr. Hegde B.M. Vice-chancellor, Manipal Academy of Higher Education.
41. Dr. Basappa.K, Professor of Preventive and Social Medicine and Former Dean.
42. Dr. Shivaram C. Emeritus Professor in Community Medicine, M.S. Ramaiah Medical College.
43. Sri. S.V. Rama Rao, Consultant in Health, Bangalore.
44. Dr. Ramakrishna V, Health Education Consultant, IUPHE
45. Prof. Joga Rao S.V, Director, TILEM, National Law School of India University.
46. Mrs. Sudha Tewari, Managing Director, Parivar Seva Sanstha, New Delhi.
47. Dr.N. Shantaram, President, Karnataka Association of Community Health.

ANNEXURE - 6

ANNEXURE - 6a

LIST OF SUGGESTIONS BY POST - KANNADA

Name of the Individual	Organisation/Designation	Place
1. Mr. Abdul Mujeeb S		Tumkur
2. Administrative Medical Officer	General Hospital, Soraba	Shimoga
3. Mr. Anjanappa		Bangalore
4. Anonymous		Bangalore
5. Anonymous		Bangalore
6. Mr. Asthulekhan E Lodi		Gadag
7. Dr. B. Ashoka Reddy	Karnataka State Government Doctor's Association ®	Chitradurga
8. Mr. N.Y. Badager		Belgaum
9. Mr. Bahubali		Belgaum
10. Mr. Banada S S		Bidar
11. Mr. Basava Raju		Tumkur
12. Mr. Bhat G .S	FPAI	Mysore
13. Dr. Chandrappa Gowda		Shivamogga
14. Ms. Chandrika S Y		Davanagere
15. Mr. Dakappa Muddhol		Belgaum
16. District Health and FW Officer		Chamarajanagar
17. Deputy Medical Director	District Cholera Control Team	Gulbarga
18. Dr. Dharwad S C	District Malaria Office	Dharwad
19. Mr. Eerappa M Hulihalli		Haveri
20. Mr. Guruswamy		Bellary
21. Medical Officer	Mobile Doctor's Unit	Kollegal
22. Mr. Heggade V S	Taluka Industrial Centre	Bidar
23. Hony Secretary	Teachers Association, Government Polytechnic	Bidar
24. Mr. Kaashivappa A Thotagi		Belgaum
25. Karyadarshi	Taluk Soliga Abhivruddi Sangha (Regd.)	Chamarajanagar
26. Mr. Keshvappa M G		Shivamogga
27. Mr. Krishnamurthy B R		Bangalore
28. Mr. M.D. Krishnayya	Karnataka State Yaadhava Vani Sangha	Bangalore
29. Dr. Kulakarni S S		Belgaum
30. Kumari Shwetha M Revalkar		Davanagere
31. Mr. Lakshmana Rao T K		Bangalore
32. Dr. M B Rudrappa	Health and Family Welfare Training Centre	Hubli
33. Mr. Mahadeva Shetty K		Mysore
34. Dr. S.B. Maheshwara	Dudee Organisation for Rural Reconstruction (Regd.)	Gundlupet
35. Dr. Muralidhar	Karnataka State Govt Indian Health and Homoeopathy Contract Doctor's Association (Regd.)	Bellary
36. Mr. Nagappa R Tiger	Karnatak Dalita Sangharsha Samiti	Gulbarga
37. Mr. Nagaraja. A	Jai Bheem Youth Union (Regd)	Bangalore
38. Mr. M.S. Nagaraj	Karnataka State Pharmacist's (Allopathy) Association	Bangalore
39. Mr. Nanjundaiah	FEDINA - VIKASA	Mysore
40. Mr. Nataraj	Sri Guruboodhi Swamigala Vidhyathi Nilaya	Hunusur
41. Mr. Nirvani Gowda		Hassan
42. Mr. Patil N S and 40 others	Chalakulu, Mattanuru, Malkarna and Shosa	Belgaum
43. Smt. Philomena Joy	Rural Literacy and Health Programme	Mysore

44.	Mr. Prabhakar N P		Bidar
45.	Mr. Prabhakar Rao & 6 others		Bidar
46.	Dr. Raju		Shivamogga
47.	Mr. Ramachandra I. Pavar		Belagaum
48.	Dr. Ramachandra K.		Mandya
49.	Dr. S B Maheshwara.	Dudee Organisation for Rural Reconstruction	Gundlupet
50.	Mr. Sanga N R		Bagalkot
51.	Dr. Sangamesh Kalahal	K.S.G.I.S.M.O.A.	Bangalore
52.	Mr. Sattar S.A and 6 others		Bhalki
53.	Secretary	Taluk Soliga Abhivridhha Sangha	Kollegal
54.	Mr. Seetharamaiah & Dasegowda	Govt Nurses Association, Karnataka	Bangalore
55.	Ms. Shashikala		Belagaum
56.	Mr. Shabbir Ahmad Athaar		Gokak
57.	Mr. Shena Shetty	Aadhivaasi shikshana kendra	Bantwal
58.	Sidharameshwar Guruji	Revansidheshwar Prasanna Education Society	Bidar
59.	Mr. Sidheshwaran G.N.	Chitradurga District Health Supervisor Association	Chitradurga
60.	Mr. Srinath. N. Navale		Belgaum
61.	Dr. P. S. Upadhyaya	Taluka Medical Office	Shivamogga
62.	Mr.H.Venkataramanayya	Shri Venkateshwara Kendra Trust ®	Bangalore
63.	Ms. Sheena Shetty	Adivasi Sikshana Kendra	Bantwala
64.	Mr. Shettar M S		Gadag
65.	Mr. Siddappa Haralennayavar		Kunsi
66.	Mr. Siddaramappa	Ajjampura, Singtagere, Sakhrayapatna	Chikkamagalur
67.	Dr. P.K. Srinivas	District Malaria Officer	Mysore
68.	Mr. Srinivas Murthy		Bangalore
69.	Mr. Subramanya R		Bangalore
70.	Taluka Health Officer,	General Hospital	Chintamani
71.	Taluka Health Officer		Yadhagiri
72.	The President	Ramamurthy Nagar Welfare Association	Bangalore
73.	Mr. Thimmiah H D		Chitradurga
74.	Mr. ThyaraMallesh S M		Chitradurga
75.	Mr. Venkatesh K R	K R Pete General Hospital	Mandya
76.	Mr. Venkatesh R		Bangalore
77.	Mr. Veerabhadrappe H		Bhadravathy
78.	Ms. Vijayalakshmi Yella		Chitaguppa
79.	Dr. Yamanur Saheb B P	Karnataka Rajya Nadaf / Pingara Sangha	Bellary
80.	Mr. G.R. Yogendra Nayak		Shimoga
81.	Taluka Health Officer		Udipi
82.	Dr. R Venkatesh		T Narsipura
83.	Smt Vatsala	C/o T S Sridhar	Yelahanka
84.	Dr. M Chandrashekar	Ex Chief Judge	Mangalore
85.	Dr. Dharmaraya Ingle	Medico legal Expert	Bijapur
86.	Dr. Hallera .C.M	Taluk Health Officer	Byadagi, Haveri
87.	Jeevajala Kendra	Nagavalli	Chamarajnagar
88.	Dr. Ravikant .S		Hubli
89.	Dr. K. Thippayya	Retd. District Health Officer	Chitradurga
90.	D. R. Chikkoppa	Health Guide, Surebaan	Belgaum
91.	Sri. Mohan .K. Shetty	MLA	Kumta
92.	Dr.V. R. Krishnamurthy	Medical Officer, CHC	Gandasi, Hassan
93.	Mr. Satya	Jagriti Vedike	Mysore
94.	Mr. A. P. Chandrashekar		Mysore
95.	G.A.M.C.M. Teachers Association		Mysore
96.	Taluk Health Officer		Kundapur
97.	Administrative Medical Officer	Crawford Hospital	Sakaleshpur
98.	Dr.A. S. Upadhyaya	Taluk Health Officer	Theerthahalli
99.	Dr. M .R. Gayathri	Medical Officer, PHC	Arasurali
100.	Medical Officer	PHC, Konandur	Theerthahalli

ANNEXURE - 6b

LIST OF SUGGESTIONS BY POST - ENGLISH

Name of the Individual	Organisation / Designation	Place
1. Anonymous		Bangalore
2. Justice Avadhani K K		Uttar Kannada
3. Mrs. Banerjee		Bangalore
4. Dr. N. D. Bendigeri	Associate Professor, K.I.M.S.	Hubli
5. Mr. E. Basavaraju	Bharath Gyan Vigyan Samithi	Bangalore
6. Dr. Chandrashekar N M.	Homeopathic Forum	Bangalore
7. DHO	Health & Family Welfare Dept.	Bangalore
8. Mr. Farooqui M A H		Belgaum
9. Mr. Gangamalliah		Bangalore
10. Mr. Giri A T S	Bangalore City District Youth Congress (I)	Bangalore
11. Dr. Govindaraju	K R Hospital	Mysore
12. Mr. Guttal M C	Directorate of Health and F W Services	Bangalore
13. Dr. Hanumanthappa T.		Chinakurali
14. Medical Officer	Primary Health Centre	Shimoga
15. The Head Master	Manikappa Bandeppa Khashapura Higher Primary and High School	Bidar
16. Dr. Jayanth G Paraki.		
17. Dr. K. Taranath Shetty	NIMHANS	Bangalore
18. Mr. Krishna Murthy G		Bangalore
19. Kumari Sandhya		Bangalore
20. Mr. G. Krishna Swamy	President, Garuda Seva Samaj	Bellary
21. Dr. M H Baig	District Hospital	Bidar
22. Dr. Mahendranath K M	Indian Rheumatism Association, Karnataka State	Bangalore
23. Dr. Maliyappa G H	Shoba Nursing Home	Arsikere
24. Dr. Marekannavar S N		Mysore
25. Mr. Murthy S N S	HAL II Stage Civic Amenities and Cultural Association	Bangalore
26. Mr. Narayana H S		Bangalore
27. Mrs. Nassema Banu	Government Urdu Middle and Higher Primary School	Tumkur
28. Dr. Prakash C Rao	Drugs Action Forum, Karnataka	Bangalore
29. Mr. Rangaswamy K.L.		Bangalore
30. Mrs. Rajanna N	Formerly Member, Karnataka Legislative Assembly	Bangalore
31. Mrs. Rajarama K E T	Population Research Centre	Dharwad
32. Mr. Rajesh		Humnabad
33. Dr. S.V. Rama Rao	Prof. of Community Medicine	Bangalore
34. Mr. Ramesh Kumar Pande	Member, Karnataka Legislative Assembly	Bidar
35. Dr. Ranganath T		Mysore
36. Mr. Reddy C R		Bidar
37. Mr. Roy David V S	Coorg Organisation for Rural Development	Kodagu
38. Mr. Sagar K S	Citizens Forum	Bangalore
39. Ms. Sangeeta C M		Humnabad
40. Dr. Sanjeevi Shayana		Raichur
41. Mr. Shakeel Ahmed		Tumkur
42. Mr. Sharshchandra H D		Bangalore
43. Dr. Shivarama Shastry	PHC Savalanga	Dhunnali

44.	Mr. Shivasharanappa Chitta	Akkamahadevi Womens College	Bidar
45.	Mr. Srinath P L		Mysore
46.	Mr. Srinivasa Rao		Mysore
47.	Students	Diploma Physiotherapist Youth Forum	Bangalore
48.	Dr.Sumanth Goel		Bagalkot
49.	Dr.UdayaKumar		Bangalore
50.	Mr. Varadaraj B K		Bangalore
51.	Dr. U.S. Vanahalli	President, Dr. Hahnemann's Rural Homeo Medical Practitioner's Association ®	Mahalingpur
52.	Mr. Venkatesh		Chamarajanagar
53.	Mr. Vishwanath Ashturey		Bidar
54.	Dr. R.S. Wali	Assoc. Prof., B.L.D.E.A's Medical College	Bijapur
55.	Mr. Yogesh G		Bangalore
56.	Mr. Ziauddin Alvi		Bidar
57.	Dr. Jagadish	CEO, Consulting Engineering Services India Ltd.	
58.	Dr. Shashikala M	Community Health Specialist, St Martha's Hospital	
59.	Dr. M B Rudrappa	Epidemiologist, H&FW Training Centre	Hubli
60.	Dr. B T Basanthappa	Professor, Government College of Nursing	Bangalore
61.	Dy Chief Medical Officer	CHC	Mulki
62.	Dr. B N Brahmacharya	Hony Secy. Prakruti Jeevana Kendra ® Trust	Bangalore
63.	Dr. Ramkrishna B Goud,	PG in Community Medicine, MSRMC	Bangalore
64.	Dr. P. K. Srinivas	District Malaria Officer	Mysore
65.	Mrs. Laila Ullapally	Advocate, Citizen's Action group	Bangalore
66.	Dr N. S. Deodhar	Consultant in Health Sciences	Pune
67.	Mr. B. Raghava Shetty		Saligrama
68.	Dr. P. N. Halagi	Director, DHFWS, (Retd)	Bangalore
69.	Dr. B. C. Rao		Bangalore
70.	Dr. Philip. G. Thomas	HOD of Surgery, St. John's Hospital	Bangalore
71.	Dr. Mahadanthappa	Chairman, Doctor's in Service Sub Committee	IMA. Bangalore
72.	Prof. Tara Gopaldas	Director, Tara Consultancy Services	Bangalore
73.	Dr. T. L. Devaraj	Dy. Dir of Ayurveda (Rtd)	Bangalore
74.	Dr. N. Santharam	HOD of PSM, Sri Devaraj Urs Medical College	Kolar
75.	Dr. Vasant Kumar	Prof of OBG, Guntur Medical College	Guntur
76.	Dr. K. S. Mani	Neurological Clinic	Bangalore
77.	Dr. H. V. Parashwanath	Chief Executive Officer	Bangalore
78.	Dr. M. K. Mani	Nephrologist, Apollo Hospital	Chennai
79.	Dr. M. R. Raju	Mahatma Gandhi Memorial Medical Trust	Bhimavaram
80.	Dr. Rajesh Surgihalli	Medical Officer, PHC, Ulavi	Shimoga
81.	Mr. Harshavardhan		Bijapur
82.	Mrs. Parvathi Subramanian	FPAI, Bangalore Branch	Bangalore
83.	Dr. L. Chandramma	Medical Superintendent, Bowring Hospital	Bangalore
84.	Dr. Chakko. K. Jacob	Department of Nephrology, CMC	Vellore
85.	Dr. Padma Rao	Obstetrician & Gynaecologist	Manipal
86.	Mr. B. M. Kumara Swamy	Secretary, FPAI	Shimoga
87.	Mr. Seshagiri Rao	Secretary General, FPAI	Mumbai
88.	Medical Officer	PHC, Kunavalli	Shimoga
89.	Dr. P. R. Desai	Association of Nursing Homes and Private Hospitals in Karnataka	Bangalore
90.	Dr. Kavitha Bhatt	Paediatric Endocrinologist, Manipal Hospital	Bangalore
91.	Dr. C. Shivaram	Chairperson. Health Care Waste Management Cell	Bangalore
92.	Convener	Jayanagar, Citizens Forum	Bangalore

ANNEXURE – 7

THE KARNATAKA PRIVATE HEALTH CARE ESTABLISHMENTS BILL, 2000

A Bill to provide for the Promotion and Monitoring of Private Health Care Establishments in the State of Karnataka and matters connected therewith or incidental thereto.

Whereas it is expedient in the public interest of quality health care to promote and monitor by law the running of Private Health Care Establishments in the State by stipulating minimum standards for quality of service in keeping with principles of medical ethics,

Be it enacted by the Karnataka State Legislature in Fifty first year of the Republic of India, as follows:

1. Short Title, Commencement and application.

- (1) This Act may be called the Karnataka Private Health Care Establishments Act 2000.
- (2) It shall come into force on such date as the State Government may, by notification, appoint and different dates may be appointed for different provisions of the Act.
- (3) This Act shall apply to all health care establishments.

2. Definitions. In this Act, unless the context otherwise requires:-

- (a) ‘**Accreditation /Registration means accreditation**’/ **registration** granted under section 5;
- (b) ‘**Accreditation / Registration Authority**’ means the Authority constituted under section 4;
- (c) ‘**Appellate Authority**’ means an authority appointed by the State Government, by notification, to be the Appellate Authority for the purpose of this Act;
- (d) ‘**Appointed day**’ means the date appointed under sub-section (2) of section 1;
- (e) ‘**Bangalore Metropolitan Area**’ means the Bangalore Metropolitan area as defined in Bangalore Development Authority Act, 1976 (Karnataka Act 12 of 1976).
- (f) ‘**Clinical Laboratory**’ means an establishment where-
 - (i) biological (pathological), bacteriological, radiological, microscopic, chemical or other tests, examinations or analysis, or
 - (ii) the preparation of cultures, vaccines, sera or other biological or bacteriological products in connection with the diagnosis or treatment of diseases, are or is usually carried out;
- (g) ‘**Department**’ means the Department of Health and Family Welfare or the Department of Indian Systems of Medicine and Homeopathy, Government of Karnataka as the case may be
- (h) ‘**Health Care Establishment**’ means a Hospital or dispensary with beds or without beds, a Nursing Home, Clinical laboratory, Diagnostic Centre, Maternity Home, Blood Bank, Radiological Centre, Scanning Centre, Physiotherapy Centre, Clinic, Polyclinic, Consultation Centre and such other establishments by whatever name called where investigation, diagnosis and preventive or curative or rehabilitative medical treatment facilities are provided to the public and includes Voluntary and Private Establishments.

- (i) **'Medical Practitioner'** means a Medical practitioner registered under the Homeopathic practitioner Act, 1961 (Karnataka Act 35 of 1961), Ayurvedic, Naturopathy, Siddha, Unani and Yoga practitioners Registration and Medical practitioners Miscellaneous Provisions Act, 1961 (Karnataka Act 9 of 1962), Medical Registration Act, 1961 (Karnataka Act 34 of 1961), Indian Medicine Central Council Act, 1970 (Central Act 48 of 1970), Homeopathy Central Council Act, 1978 (Central Act 59 of 1973) and Medical Council Act, 1956 (Central Act 102 of 1956) to practice the system of medicine which he has studied, qualified and registered and includes a Dentist registered under the Dentists Act, 1948 (Central Act 16 of 1948).
- (j) **'Local Inspection Committee'** means the committee appointed under section 8;
- (k) **'Manager'** in relation to a Health Care establishment means the person, by whatever name or designation called, who is in charge of, or is entrusted with, the management or running of the Health Care Establishment;
- (l) **'Maternity home'** means an establishment where women are usually received or accommodated or both for the purpose of confinement and antenatal or post-natal care in connection with child-birth and includes an establishment where women are received or accommodated for the purpose of sterilization or medical termination of pregnancy;
- (m) **'Medical treatment'** means systematic diagnosis and treatment for prevention or cure of any disease, or to improve the condition of health of any person through allopathic or any other recognised systems of medicine such as Ayurveda, Unani, Homeopathy, Yoga, Naturopathy and Siddha; and includes Acupuncture and Acupressure treatments.
- (n) **'Nursing Home'** means an establishment where persons suffering from illness, injury or infirmity (whether of body or mind) are usually received or accommodated or both for the purpose of treatment of diseases or infirmity or for improvement of health or for the purposes of relaxation or for any other purpose whatsoever, whether or not analogous to the purposes herein before mentioned in this clause;
- (o) **'Physiotherapy establishment'** includes an establishment where massaging, hydro-therapy, remedial gymnastics or similar work is usually carried on, for the purpose of treatment of diseases or infirmity or for improvement of health or for the purposes of relaxation or for any other purpose whatsoever, whether or not analogous to the purposes herein before mentioned in this clause;

3. All Private Health Care Establishments to be Registered:

On and after the appointed day, no private health care establishment shall be established, run or maintained in the State except under and in accordance with the terms and conditions of Registration granted under this Act:

Provided that a private health care establishment in existence immediately prior to the appointed day shall apply for such registration within ninety days from the appointed day and pending orders thereon may continue to run or maintain till the disposal of the application.

4. Registration authority for the State of Karnataka consisting of 12 Members as under:

- (1) Commissioner for Health and Family Welfare, Karnataka
- (2) Director of Health Services, Karnataka

- (3) Director, Indian System of Medicine & Homeopathy
- (4) President, Karnataka Medical Council
- (5) President, ISM Council
- (6) President, Homeopathy Council
- (7) President, Indian Medical Association, Karnataka State
- (8) President, Association of Nursing Homes and Private Hospitals Karnataka
- (9) One General Practitioner (allopathic) – nominated
- (10) One representative of private establishments of Ayurveda
- (11) & (12) Two representatives nominated by the Nursing Homes to represent different regions of the State.

5. Application for Registration:

- (1) Every person or institution or organisation desiring to establish, run, maintain or continue to run and maintain a health care establishment shall make an application to the concerned Registration authority in such form and in such manner along with such fees as may be prescribed and different fees may be prescribed, for different class or classes of Health Care Establishment.

6. Disposal of applications:

- (1) On receipt of an application under section 5, the Registration Authority, having regard to the provisions of section 7 and after such enquiry as may be necessary, by Local Inspection Committee, either grant Registration subject to such conditions as may be prescribed or reject the application:

Provided that the Registration Authority shall not reject the application without giving an opportunity of being heard to the applicant and after recording the reasons for such rejection. If no communication is received within 90 days of application, the application is deemed to have been accepted.

- (2) Every order passed under sub-section (1) shall be communicated to the applicant forthwith.
- (3) Every Registration granted under sub-section (1) shall be valid for a period of five years and may be renewed once in five years on an application made in such form, in such manner and on payment of such fees, as may be prescribed.

7. Factors to be taken into account while disposing of applications under section 6:

In disposing of applications under section 6, the Registration Authority shall have regard to the following namely:

- (a) that the premises housing the health care institution is located in hygienic surroundings and otherwise suitable for the purpose for which it is established or sought to be established;
- (b) that the health care establishment is adequately staffed with qualified doctors, qualified / trained para medical personnel;
- (c) that the health care establishment has the necessary buildings with adequate space for performing its various functions, equipments and other infrastructure facilities;
- (d) that such institution is in a position to provide such facilities, possess such skilled manpower and equipment and maintain such standards as may be prescribed;

- (e) that the health care establishment conforms to the standards referred to in section 9;
- (f) that the special provisions have been taken into account in certain categories of health care establishments such as Radiotherapy, Nuclear Medicine Centre and Ultrasound Clinics ; and
- (g) such other factors as may be prescribed.

8. Local Inspection Committee:

There shall be a Local Inspection Committee for each of the Districts consisting of 6 Members as under:

1. District Surgeon
2. President or Secretary Indian Medical Association of the District
3. One representative of Private Nursing Homes in the District-nominated
4. Representative of Indian System of Medicine of the District
5. One General Practitioner of the District, to be nominated.
6. One senior nurse, to be nominated

Local Inspection Committee for Bangalore Metropolitan Area consisting of –

1. Health Officer B.C.C.
 2. Representative of Karnataka Medical Council
 3. Secretary, Indian Medical Association, Karnataka.
 4. President of Association of Nursing Homes and Private Hospitals, Bangalore
 5. Deputy Director, Dept. of Indian System of Medicine & Homeopathy
 6. President, Indian Association of General Practitioners.
 7. One senior Nurse, to be nominated.
- (1) The Local Inspection Committee, either with prior intimation or on receiving a complaint, may at reasonable time, inspect, a Health Care Establishment to satisfy itself that the provisions of this Act or the rules made there under and the conditions of Registration are being duly observed. The Manager of the Health Care establishment shall be responsible to provide all reasonable facilities for such inspection.
 - (2) If any defects or deficiencies are noticed during inspection, the Local Inspection Committee shall report to the Registration Authority which may direct the Manager of the Health Care Establishment to remedy the same within such reasonable time as may be specified in the order. Thereupon the Manager shall comply with every such direction and report the compliance to the Registration Authority within the time so specified.

9. Standards:

- (1) Every Health Care Establishment shall conform to the standards laid down by or under this Act or any other laws, regarding the staff and their qualifications, operation theatre, buildings, space requirements, equipment, facilities to be provided to the patients and their attendants, maintenance and the like matters.
- (2) The standards have to be set separately for different groups (urban / rural, size, other categories), as determined by the Registration Authority. Expert Committees will be constituted by the Registration Authority for setting standards for each group. The composition, terms and conditions, powers and responsibilities, etc, will be laid down by the Rules.

10. Fee chargeable to be notified:

- (1) Every Health Care Establishment shall for the information of the patients and general public make available the structure of fees charged by it for different medical treatment and other services through Brochures / Booklets.
- (2) No Health Care Establishment shall charge or collect from the patient or his relatives, any amount in excess of the fee printed in the brochure / booklet, and without issuing proper receipt for every amount charged or collected.

11. Obligations of Health Care Establishments:***Every Health Care Establishment shall:***

- (a) Administer necessary first aid and take other life saving or stabilising emergency measures in all medico-legal or potentially medico-legal cases such as victims of road accidents, accidental or induced burns or poisoning or criminal assaults and the like which present themselves at the establishment;
- (b) Actively participate in the implementation of all national and State health programmes in such manner as the State Government may specify from time to time; and furnish periodical reports thereon to the concerned authorities;
- (c) Maintain proper medical records in such form and in such manner as may be prescribed;
- (d) Perform statutory duties in respect of communicable diseases to prevent the spread of the disease to other persons and report the same to the concerned public health authorities immediately.

12. Suspension or cancellation of registration:

The Registration authority may on the basis of a complaint and if a Prima Facie case exists about the breach of any of the provisions of this Act or the rules made there under, or conditions of Registration issue notice to any health care establishment to show cause why its registration should not be suspended for the reasons mentioned therein.

13. Appeal:

- (1) Any health care establishment whose application for Registration is rejected or deemed to have been rejected or whose Registration has been suspended or cancelled or is otherwise aggrieved by any original order made under this Act, may prefer an appeal to the Appellate authority in such manner and on payment of such fees as may be prescribed by the appellate authority (authority to be specified in the Rules).
- (2) Every such appeal shall be preferred within thirty days from the date of receipt of the order appealed against;
- (3) The Appellate Authority may, after holding an enquiry pass such order as it deems fit as far as possible within a period of sixty days from the date of filing of the appeal.

14. Penalties:

First Offence	–	Warning
Second Offence	–	Fine not exceeding Rs.5000/-
Third Offence	–	Suspension of Registration.

15. Power of entry, Inspection, etc:

- (1) Subject to such rules as may be prescribed, the State Government may, specially authorise any officer of the State Government (hereinafter referred to as authorised officer) to-
- (a) enter, at all reasonable times, and with such assistants if any, being persons in the service of the State Government as he thinks fit, any place which is, or which he has reason to believe is being used as a health care establishment.
 - (b) Make such examination of the premises of a health care establishment and of any register, record, equipment, article or document found therein and seize any document or record as he may deem necessary for the purpose of examination, analysis or investigation and retain them as long as he thinks it necessary to do so for such purpose, provided the authorised officer after seizing documents and records shall intimate the reason for such seizure to the Manager of the Health Care Establishment as early as is practicable.
 - (c) Make such enquiry and take on the spot or otherwise the statement of any person as he deems necessary:
 - (d) Exercise such other powers as may be necessary; for carrying out the purposes of this Act.

Provided that no person shall be required under this sub-section to answer any question or give any evidence tending to incriminate himself;

Provided further that, no residential accommodation (not being a private health care establishment-cum-residence) shall be entered into and searched by the authorised officer except on the authority of a search warrant issued by a Magistrate having jurisdiction over the area and all searches and seizures under this Section shall so far as may be, made in accordance with the provisions of the Code of Criminal Procedure, 1973 (Central Act 2 of 1974).

- (2) The authorised officer shall make a report to the Registration Authority regarding the result of the inspection, searches and seizure made by him under sub-section (1), and the Registration Authority shall take necessary action on the said report under this Act.

16. Offences by a Company:

- (1) Where an offence against any of the provisions of this Act or any rule or order made hereunder has been committed by a company, every person who at the time the offence was committed, was incharge of and was responsible, to the Company, for the conduct of business of the company, as well as the company shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly.
- (2) Notwithstanding anything contained in sub-section (1) where any such offence has been committed by a company, and it is proved that the offence has been committed with the consent or connivance of or is attributable to, any negligence on the part of the Director, Manager, Secretary or other officer of the company, such Director, Manager, Secretary or other officer of the company shall be deemed to be guilty of that offence and shall be liable to be prosecuted and punished accordingly.

Explanation: For the purpose of this section:-

- (a) "a company" means any body corporate and includes a trust, firm, a society or other association of individuals:

(b) "the director" in relation to:

- (i) A firm means a partner in the firm;
- (ii) A society, a trust or other association of individuals means the person entrusted under the rules of the society, trust or other association, with management of the affairs of the society, trust or other association, as the case may be.

17. Cognizance of offences:

No Court shall take cognizance of any offence punishable under this Act, except upon a complaint in writing made by the Chairman of the Local Inspection Committee with the prior approval of the Registration Authority.

18. Powers of State Government to give directions to the Registration Authorities:

The State Government may give such directions to the Registration Authorities as are in its opinion necessary or expedient for carrying out the purposes of this Act. Government shall record the reasons necessitating issuance of the said directions and it shall be the duty of the Registration Authority to comply with such directions.

19. Protection of action taken in good faith:

No suit, prosecution or other legal proceeding shall lie against the State Government or any officer, authority or person in respect of anything which is in good-faith done or intended to be done in pursuance of the provisions of this Act, or any rule or order made there under.

20. Removal of difficulties:

If any difficulty arises in giving effect to the provisions of this Act the State Government may, by order published in the Official Gazette, make such provisions not inconsistent with the provisions of this Act as appear to it to be necessary or expedient for removing the difficulty:

Provided that no such order shall be made after expiry of a period of two years from the date of commencement of this Act.

21. Power to make rules:

- (1) The State Government may, by notification and after previous publication, make rules for carrying out the purposes of this Act.
- (2) In particular and without prejudice to the generality of the foregoing provisions such rules may provide for all or any of the following, namely:
 - (a) the manner in which an application for Registration shall be made and the fee which shall be accompanied under section 5;
 - (b) the conditions subject to which, the form in which and the period for which Registration may be granted under section 6;
 - (c) the manner and form in which the period for which and the fee on payment of which Registration may be renewed under section 6;
 - (d) factors to be taken into account by the Registration Authority under section 7;
 - (e) the standards to be enforced by the Registration Authority under section 9;
 - (f) the manner in which an appeal may be preferred under section 13;
 - (g) any other matter which is required to be or as may be prescribed.

22. Rules and orders to be placed before the State legislature:

Every order made under section 18 and every rule made under section 19 shall be laid as soon as may be after it is made, before each House of the State Legislature while it is in session for a period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid both Houses agree in making any modification in the rule or order both houses agree the rule or order should not be made, the rule or order shall thereafter have effect only in such modified form or be of no effect, as the case may be; so however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule or order.

23. Repeal and Savings:

- (1) The Karnataka Private Nursing Homes (Regulations) Act. 1976 (Karnataka Act 75 of 1976) is hereby repealed.
- (2) Notwithstanding such repeal:
 - (a) Anything done or any action taken under the repealed Act shall be deemed to have been done or taken under the corresponding provisions of this Act;
 - (b) All applications made under the repealed Act for registration or renewal prior to the commencement of this Act and pending consideration on the date of commencement of this Act shall abate and the fee paid, if any, in respect of such application shall be refunded to the applicant. Such applicant may apply afresh for Registration under the provisions of this Act.

STATEMENT OF OBJECTS AND REASONS

It is considered necessary to bring a comprehensive legislation in place of the Karnataka Private Nursing Home (Regulation) Act, 1976 to have effective control over Private Health Care Establishments in the State. The Bill, among other things provides for:-

- (i) Registration of private health care establishment and Suspension and cancellation of Registration;
- (ii) constitution of Registration Authority and Local Inspection Committee;
- (iii) classifying health care establishment with reference to different standards and to require the health care establishments to conform to the standards regarding staff, operation theatre, buildings, equipment etc.
- (iv) requiring every private health care establishment to notify the fees structure charged by it for different medical treatment and other services;
- (v) obligations of private health care establishments,
- (vi) penalties for contravention of the act and the rules.

Certain other consequential and incidental amendments are also made.

Hence the Bill.

MEMORANDUM REGARDING DELEGATED LEGISLATION

- Clause 5 : Empowers the State Government to make rules regarding the form and manner in which the application has to be made and the fee to be paid along with the application for Registration of Health Care Establishments.
- Clause 6 : Empowers the State Government to make rules regarding;
 - (i) Conditions of grant of Registration
 - (ii) The form and the manner of application and payment of fees.
- Clause 7 : Empowers the State Government to make rules regarding the facilities to be provided, possession of skilled manpower and equipment by Private Health Care Establishments and such matters.
- Clause 9 : Empowers the State Government to make rules regarding the different standards for different categories of Private Health Care Establishments.
- Clause 11 : Empowers the State Government to make rules regarding the form and the manner in which the medical records of the Private Health Care Establishments have to be maintained.
- Clause 13 : Empowers the State Government to make rules regarding the manner and fee for preferring an appeal to the Appellate Authority by the Private Health Care Establishment aggrieved by any original order made under this Act.
- Clause 14 : Empowers the State Government to make rules for carrying out the purposes of this Act and any other matter which is required to be made.

The Proposed delegation of the legislative power is normal in character.

ANNEXURE 8

REPORT ON JANAAROGYA SABHE PROCESS IN KARNATAKA

March 2000-February 2001*

1. **Background:** To support the People's Health Assembly, Dhaka (Dec2000), a National Coordination Committee (NCC) of 18 National Networks emerged in the November 1999- November 2000 phase to mobilise and prepare for the event. The NCC decided to facilitate the organisation of district and state level meetings and initiatives to culminate in a National Health Assembly called Jan Swasthya Sabha at Calcutta in Dec 2000, a few days before the Global Health Assembly at Dhaka (4th - 8th December 2000). A National Working Group (NWG) was formed to catalyse this massive mobilisation. Community Health Cell was an active member of National Coordination Committee and National working Group and the whole planning process. At a National Level AIPSN / BGVS were identified as a lead organisation to coordinate / facilitate this process in close collaboration with all the other networks

The Goal

The goal of the Peoples Health Assembly to re-establish health and equitable development as top priorities in local, national and international policy-making, with Primary Health Care as the strategy for achieving these priorities. The Assembly aims to draw on and support people's movements in their struggles to build long-term and sustainable solutions to health problems.

The Focus of the Campaign

The 6 prerequisites to enable People's Health in People's Hands are:

1. Reversing Structural Adjustment and Globalisation, which clearly is worsening the quality of life of the majority of the Indian people.
2. Decentralisation and democratisation of health care along with adequate resources to ensure its effectiveness.
3. Bringing the community to the centre stage of the health planning and health care process.
4. Ensuring the provisioning of basic needs to all citizens through decentralised planning and appropriate technology transfers.
5. Curbing the unregulated and unethical commercialisation of the health profession and promoting the growth of rational, ethical and competent professional practice.
6. Bringing together Voluntary Organisations and People's Movements to build a powerful force to work to lessen disparities, promote organisations of weaker sections, and build people's capabilities.

* Submitted to Karnataka Task Force on Health and Family Welfare.

2. The Process in Karnataka was called 'Janaarogya Sabhe' and activities in Karnataka related to it were started in March 2000 with meeting of 6 networking agencies in Karnataka (Bharat Gyan Vigyan Samiti (BGVS), Community Health Cell (CHC), Mahila Samakhya (MS), Catholic Health Association of India-Karnataka (CHAIKA) Karnataka Rajya Vigyan Parishat (KRVP) and Drug Action Forum - Karnataka (DAF-K). This was followed by a series of discussions and deliberations in the state with various organisations who agreed to join the collective initiative. These included Vivekananda Foundation (VF), Voluntary Health Association of Karnataka (VHAK), Federation of Voluntary Organisation For Rural Development Karnataka (FEVORD-K), Christian Medical Association of India (CMAI), National Alliance for People's Movement (NAPM-K), New Entity for Social Action (NESA), Society for Service to Voluntary Agencies (SOSVA), Family Planning Association of India (FPAI), Campaign against Child Labour (CACL), Forum For Street Children, Foundation For Revitalisation of Local Health Traditions (FRLHT), and Joint Women's Programme (JWP). Others also joined in later and these included Dalit Sangharsh Samithi (DSS), Democratic Youth Federation of India (DYFI), Karnataka Prantha Raitha Sangh (KPRS), Karnataka Rajya Raitha Sangh (KRRS), and Karnataka State Medical and Sales Representatives Association (KSMSRA).

A State Coordination Committee was formed in the month of May 2000, with Dr. H.sudarshan, (Vivekananda Girijana Kalyana Kendra), Chairman, Karnataka Health Task Force and respected development activist as Chair Person and Ms. Ruth Manorama of Women's Voice as vice chairperson. Dr. Prakash Rao of DAF-K and Mr Basavaraju of BGVS were asked to be the Technical and Organisational Convenors respectively. A small working group was formed to help the above to monitor, train and communicate with various groups working both at state and district levels.

3. National launch workshop at Hyderabad-April 5-7, 2000: In the month of April 2000, eight (8) members from Karnataka who were active in state level activities attended the National People's Health Assembly launch workshop in Hyderabad. This workshop gave proper insight to the participants about the whole ideology of the PHA process. In the workshop, draft materials were given to the participants, to enable the participants to carry out the activities at the state level. These included four evolving booklets on the themes a) Globalisation and Health, b) Whatever happened to Primary Health Care, c) Caring for the vulnerable and d) Basic Needs for all and also e) A draft of a People's Health Charter and f) Some initial ideas for block level Health Surveys / Enquiries. Dr. Zafarullah Choudary of Gono Shasthya Kendra also participated in this workshop.
4. **State Level Orientation Workshop:** A State level Orientation Workshop for District level facilitators was organised by CHC and BGVS at Indian Social Institute, Bangalore between 26-28 June 2000. 82 participants from 19 districts participated in the workshop. The Health Minister Dr. Maalaka Reddy, who inaugurated the workshop, assured all cooperation from the Government for this programme. The others who attended were Mr. Abhijit Sen Gupta; Health secretary Dr. G.V. Nagaraj; Director of H and FW services, and, Dr. Chandra shekar Shetty vice-chancellor of Rajiv Gandhi University of Health Sciences (RGUHS). Background materials for this workshop were some of the draft materials that were given at the National workshop at Hyderabad. A few topics relevant to Karnataka situation were added to these topics. During this 3-day workshop participants were also oriented on how to initiate district level activities.
5. **District level Initiatives:** After this workshop various agencies in the state showed increased interest in these activities and joined the process at State and District level. Activities were planned for 20 out of 27 districts. This was decided on the basis of stronger base at District level of the organisations represented in State workshop.

District committees were formed and district activities were initiated. Ultimately district initiative took place in 18 out of 27 districts. Bangalore (R), Shimoga, Davanagere, Raichur, Koppal, Bidar, Bijapur, Tumkur, Kolar, Gulbarga, Bangalore (U), Chitradurga, Uttar Kannada, Dakshina Kannada, Belgaum, Mandya, Mysore, and Chamarajanagar. Most of these initiatives were completed by second week of November so that they could feed into the state level convention, which was held on 26th to 27th November.

6. **Publications and materials:** 5 books which were published by the NCC in English for the Jana Swasthya Sabha mobilisation process were translated into Kannada by state working group and have been used for all the deliberations during district level workshops. Along with these the draft People's Health Charter and People's Health Dialogue (block level enquires) were also translated into Kannada and circulated to all the districts. In addition a book on Kalajatha materials, which included songs, skits and street plays, was also prepared and published by SCC. These songs and skits were evolved in a Kalajatha preparation workshop held from 18th to 20th of October, at a CHAI-KA centre where resource persons who were well-versed in these low cost communication methods - folk media participated to produce the material.
7. **Kalajatha workshop:** Kalajatha workshop was organised between 2nd-5th of November 2000. After this, trainers of the Kalajatha team were instructed to go around the district to spread the message of the PHA to the Community. The districts represented in the workshop were Kolar, Shimoga, Dharwad, Raichur, Bangalore (Rural), Bellary, Chamarajanagar, Mysore; Koppal, Bijapur, Bidar, Mandya, Davanagere, Tumkur, Belgaum, Chitradurga, and Gulbarga. Teams enacted the role-play, street plays, songs and various folk methods for the purpose. Details of the messages of the mobilisation were given during the workshop to the participants. Before this 2 day orientation for the resource persons about Janaarogya Sabhe was given to 5 persons at Navajeevan Mahila Pragathi Kendra in Bangalore between October 18- 19, 2000. Kalajathas were finally organised in the following districts: Mysore, Chamarajanagar, Mandya, Davanagere, Belgaum, Raichur, Koppal, Bidar and Bijapur.
8. **People's Health Dialogue:** Discussions on format and methodology of People's Health Dialogue was carried out on 31/10/2000 at Honnali. Eight districts (Shimoga, Tumkur, Chitradurga, Davanagere, Koppal, Raichur, Kolar, and Bellary) were represented in the discussion and the participants were oriented to the objectives and methodology of such a dialogue. Apart from these eight districts, 2 other districts (Bidar and Bijapur) showed interest in carrying out the dialogue though they could not attend the discussion. At the end of the process, they were asked to carry out the dialogue in a few of the villages in which they were working. Finally the districts, which carried out the dialogue, were Bijapur, Koppal, Tumkur, Raichur and Kolar.
9. **State Level Convention:** The State level convention was held on 26th and 27th of November at Davanagere which gave opportunity to all field level workers and people to voice their concern on PHA issues including the deteriorating health situation and the growing commercialisation of health care. 357 participants from all over the state attended this convention. From among them 178 participants went to Calcutta to attend The National Health Assembly. These 178 participants including 14 who participated on behalf of Karnataka at the PHA in Dhaka were identified democratically by consulting all the groups. Of these 178 delegates 65 were women. They also belonged to 22 different organisations, which were working at State or District levels and represented 20 districts.
10. **People's Health Train:** The train journey started from Bangalore soon after the state assembly at

Davangere was over on 27th November 2000. About 150 people were flagged off in special buses from Davangere and reached Bangalore city station where 28 more people joined them. The Health Commissioner flagged off the journey and wished all success to the Karnataka contingent. The Karnataka contingent changed train at Chennai, and got on the 5th People's Health train (The Coramandel express to Kolkatta on 28th November 2000). During the journey discussions and interactions continued about the Shamiana sessions and sub conferences themes planned in the National Health Assembly (NHA) Kolkatta in which Karnataka delegates were going to participate. These discussion were based on the Materials provided by NCC for the train workshops just before the delegates began the journey. The Karnataka delegates also raised Health slogans and sang Health song during the journey and at some stations on the way. In a few stations in Andhra and Orissa local reception committees also felicitated the team. The Karnataka team arrived in Kolkatta on 30th November after a very interesting journey.

11. **Jana Swasthya Sabha Kolkatta:** The Karnataka delegates were active participants in all the programmes of Jana Swasthya Sabha They were especially good at songs and slogans and helped to liven up the proceedings. They made presentations in 13 Shamiana sessions through representatives selected by the group of which 9 belong to Northern Karnataka district. The assembly was a great opportunity to network and learn from such a massive mobilisation of State delegates and resource persons.
12. **People's Health Assembly, Dhaka:** This was attended by 1350 participants from 116 countries. In People's health Assembly at Dhaka, 15 participants belonging to seven different organisations represented Karnataka. Along with these Karnataka also had a representation through resource persons. Few important things needs to be mentioned here, there was large opposition to presentation by World bank representative and whole hearted support for the Cuban delegation. Another important features of this assembly was the entire hospitality esp. cooking and serving was done by women.
13. **Other Complementary Activities:** In addition to initiatives organised by the state coordination committee various participating organisations also organised PHA related events as part of their own organisational activity. These included a PHA presentation in the annual general body meeting of VHAK; a session at the annual general body meeting of VHAI; a scientific session on PHA themes at the annual general body meeting of CHAI; a PHA session during the NAPMS national convenors meeting and the consumer group (CREAT) meetings - all at Bangalore. In addition CHAIKA organised PHA discussions at Shimoga, Hassan and Mysore and a presentation to Janwadi Mahila Sanghatane district level meeting at Belgaum. CHC provided resource persons for all these meetings.
14. **Advocacy :** 3 Press meets were called specifically for this mobilisation process. First was in June 2000 just before the State level workshop. The next one was in November 2000 when the national leaders of the PHA process Dr. N.H. Antia, Dr. D. Banerjee, Dr. Sundarraman and few leaders from the state addressed the press at Bangalore and the last one was addressed by Dr, Sudarshan, state chair person, the day before the state level convention at Davanagere.
15. **Financial Resources:** A lot of the activities spread over 20 districts were carried out by the financial support from organisations involved in the programme and local mobilisation at district level. The Government of Karnataka agreed to support the programme by providing half of the projected amount required for this purpose.

The Jana Arogya Sabha process has been a very interesting networking process in Karnataka bringing together a large number of organisations many of whom had not worked together in the earlier years, since all of them

very busy with their own focus and agenda. This broad based networking of health groups, science movement groups, women's groups, Development groups and people's movements has been a very significant experience. This networking has been very good and should not be wasted and efforts have to be made to continue this effort and widen its scope with ultimate benefits to the Health of communities particularly in the disadvantaged areas of the state.

Another significant strength has been the production of 6 Booklets in Kannada on health issues which is a major demystification process to increase the health awareness of the people and empower them to take health responsibilities and demand health as a right.

CONCLUSION: The Jana Arogya Sabhe process has been an interesting experience especially for all those organisations who have been actively involved. It is now necessary to evolve better coordination and greater clarity in our collective efforts to make 'People's health in People's hands' a reality in the state. A creative collectivity can ensure the development of a truly authentic "Janaarogya Andolana ". It is now in everybody's hand to see this network doesn't end up as the few movements earlier. We need to gear up for this now and together with true commitment. The time for Health for All is Now !

ANNEXURE 9

INFROMATION ON KARNATAKA

GENERAL INFORMATION

1. Area in Sq Km	191791
2. Number of districts	27
3. Revenue divisions	4
4. No. of Taluks	175
5. No of towns and Urban Areas	254
6. No of inhabited villages	27066
7. No of Gram Panchayats	5692

DEMOGRAPHIC FEATURES

1. Total Population*		52,733,958
	Males	26,856,343
	Females	25,877,615
2. Decadal Growth Rate (1991 – 2001)*		+17.25%
3. Annual Growth rate (1981 – 91)		1.9%
4. Population density (2001)*		275/ sq km
5. Sex (Gender) Ratio*	964 females / 1000 males	
6. Percentage of population in the 0-6 age group*		12.94
7. Percentage of births registered (1997)		
Rural		63.3
Urban		163.4
Combined		92
8. Literacy*	Total	67.04%
	Males	76.29%
	Females	57.45%
	(Population in age group 0-6 is excluded)	
9. Percentage of SC / ST population to		
Total Population (1991 Census)	SC	16.38
	ST	4.26
10 Per capita income at current prices (1997-98)		Rs. 13,621.00

* Census of India 2001, Provisional Population Estimates

HEALTH INDEX

1.	Crude Birth Rate (SRS, 1999) Combined	22.3 / 1000 population
	Urban	19.2 / 1000 population
	Rural	23.7 / 1000 population
	(NFHS – 2)	20.4 / 1000 population
2.	Crude Death Rate (SRS, 1999)	7.7 / 1000 population

3.	Infant Mortality Rate (SRS, 1999)	58 / 1000 live births
	Urban	24 / 1000 live births
	Rural	69 / 1000 live births
	(NFHS -2)	51.5 / 1000 live births
4.	Life Expectancy at Birth (1996-2001)	
	Male	61.7
	Female	65.4
5.	Under 5 Mortality Rate (NFHS 2)	69.8 / 1000 live births
6.	Neonatal Mortality Rate (NFHS 2)	37.1/1000 live births
7.	Post-Neonatal Mortality Rate (NFHS 2)	14.4/1000 live births
8.	Perinatal Mortality Rate (1994)	47.8/1000 live births
	Rural	49.2/1000 live births
	Urban	44.3/1000 live births
9.	Percentage of children fully vaccinated (NFHS- 2)	60
	BCG	84.8
	DPT (3)	75.2
	Polio (3)	78.3
	Measles	67.3
10.	Child Mortality Rate (NFHS -2)	18.3 / 1000 children
11.	Anaemia among children (6-35 months)	70.6%
12.	Nutritional status of children (Gomez Classification), 1996	
	Severe Undernutrition	6.20%
	Moderate Undernutrition	45.40%
	Mild Undernutrition	39%
	Normal	9.40%
13.	Total Fertility Rate	
	(SRS, 1997)	2.5
	(NFHS-2)	2.13
14.	Percentage of Institutional Deliveries (NFHS - 2)	51.1
15.	Percentage of safe deliveries (NFHS - 2)	59.2
16.	Anaemia among women in 15 - 49 years age group (NFHS-2)	42.4%
17.	Newborns with Low Birth Weight (1994)	35%
18.	Percentage of mothers who received ANC (NFHS-2)	86.3
19.	Percentage of Eligible Couples protected as on March 2000	59.7
20.	Maternal Mortality Rate (SRS, 1998)	195 / One lakh live births
21.	Percentage of currently married women using (NFHS - 2)	
	a. Any contraceptive method	58.3
	b. Sterilization	52.1
22.	Unmet need for family planning(NFHS 2)	
	a. For spacing	8.3
	b. For limiting	3.2
	c. Total	11.5
23.	Percentage of women reporting a reproductive health problem (NFHS-2)	18.8

TRENDS IN KARNATAKA

1. Crude Birth Rate, Crude Death Rate and Infant Mortality Rate, 1971 to 1999

	Crude Birth Rate			Crude Death Rate			Infant Mortality Rate		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
1971	31.7	34.6	25.3	12.1	14.0	7.2	95	105	54
1975	17.7	29.7	22.5	11.1	12.5	7.5	80	86	60
1980	27.6	28.9	24.4	9.6	10.7	6.6	71	79	45
1985	29.6	30.9	26.2	8.8	9.8	6.1	69	80	41
1990	28.0	29.0	25.0	8.1	8.8	6.1	70	80	39
1992	26.3	27.4	23.3	8.5	9.4	6.0	73	82	41
1994	25.0	26.0	22.7	8.3	9.3	6.0	67	73	50
1995	24.1	25.1	22.1	7.6	8.5	5.6	62	69	43
1996	23.0	24.2	20.3	7.6	8.6	5.4	53	63	25
1997	22.7	23.9	20.1	7.6	8.5	5.4	53	63	24
1998	22.1	23.1	19.4	7.9	8.9	5.6	58	70	25
1999	22.3	23.7	19.2	7.7	8.7	5.5	58	69	24

2. Nutrition Status: Percentage Weight for Age; (12-71 months) by Sex and Time

Year	Sex	<60	60-75	75-90	>=90
1975-79	M	5.7	45.2	37.9	11.2
	F	6.8	45.5	40.1	7.6
1996-97	M	13.9	52.1	30.3	3.7
	F	12.5	47.8	31.9	5.6

3. Prevalence of Vitamin A deficiency (Percentage of Bitot's spots in the age group 12-71 months)

Year	Rural	Urban
1975-79	2.3	7.1
1996-97	0.5	1.1

4. Population distribution, percentage decadal growth rate, sex ratio and population density*

Sl No	State/District	Population 2001			Percentage decadal growth rate		Sex ratio		Population density	
		Persons	Males	Females	1981-91	1991-01	1991	2001	1991	2001
1	Belgaum	4,207,264	2,147,746	2,059,518	20.30	17.40	954	964	235	275
2	Bagalkot	1,652,232	835,684	816,548	20.79	18.84	982	977	211	251
3	Bijapur	1,808,863	928,550	880,313	22.94	17.63	948	948	147	172
4	Gulbarga	3,124,858	1,591,379	1,533,479	24.10	21.02	962	964	159	193
5	Bidar	1,501,374	770,679	730,695	26.12	19.56	952	948	231	276
6	Raichur	1,648,212	832,352	815,860	30.53	21.93	978	980	198	241
7	Koppal	1,193,496	602,026	591,470	28.05	24.57	981	982	133	166
8	Gadag	971,955	493,795	478,160	15.56	13.14	969	968	184	209
9	Dharwad	1,603,794	823,415	780,379	19.64	16.65	935	948	333	376
10	U. Kannada	1,353,299	687,026	666,273	13.66	10.90	966	970	119	132
11	Haveri	1,437,860	740,307	697,553	20.53	13.29	936	942	263	298
12	Bellary	2,025,242	1,028,481	996,761	26.84	22.30	966	969	196	240
13	Chitradurga	1,510,227	772,649	737,578	20.51	15.05	951	955	156	179
14	Davangere	1,789,693	917,320	872,373	23.07	14.78	942	951	263	302
15	Shimoga	1,639,595	829,365	810,230	15.11	12.90	964	977	171	193
16	Udupi	1,109,494	521,541	587,953	9.42	6.88	1134	1127	268	286
17	Chikmagalur	1,139,104	574,275	564,829	11.57	11.98	977	984	141	158
18	Tumkur	2,579,516	1,311,941	1,267,575	16.58	11.87	959	966	218	243
19	Kolar	2,523,406	1,281,153	1,242,253	16.34	13.83	965	970	270	307
20	Bangalore	6,523,110	3,422,797	3,100,313	38.44	34.80	903	906	2210	2979
21	Bangalore (Rural)	1,877,416	961,335	916,081	15.23	12.21	945	953	288	323
22	Mandya	1,761,718	887,307	874,411	15.96	7.14	963	985	331	355
23	Hassan	1,721,319	858,623	862,696	15.67	9.66	999	1005	230	253
24	D. Kannada	1,896,403	937,651	958,752	15.98	14.51	1020	1023	363	416
25	Kodagu	545,322	273,210	272,112	5.75	11.64	979	996	119	133
26	Mysore	2,624,911	1,335,841	1,289,070	24.84	15.04	953	965	333	383
27	Chamrajnagar	964,275	489,895	474,380	14.99	9.16	963	968	173	189
	Karnataka	52,733,958	26,856,343	25,877,615	21.12	17.25	960	964	235	275

* Census of India 2001, Provisional Population Estimates

HEALTH AND MEDICAL INSTITUTIONS IN KARNATAKA AS ON 31.3.1998

Sl. No.	Institutions by Management	Rural		Urban		Total	
		Institutions	Beds	Institutions	Beds	Institutions	Beds
I. Hospitals							
1.	State Government	8	417	168	22806	176	23223
2.	Central Government	1	25	12	1829	13	1854
3.	E.S.I	-	-	7	1125	7	1125
4.	Autonomous	-	-	4	1228	4	1228
5.	Other Departments	2	26	7	310	9	336
6.	Local Body	-	-	28	714	28	714
7.	Private	14	2547	42	7452	56	9999
	Total	25	3015	268	35464	293	39485
II. Dispensaries							
1.	Central Government	2	-	11	-	13	-
2.	E.S.I.	11	-	118	-	129	-
3.	Other Departments	25	48	5	4	30	52
4.	Local Body	3	21	22	44	25	65
5.	Private	7	4	4	-	11	4
Total		48	73	160	48	208	121
III. Primary Health Units (PHUs)							
		511	786	72	336	583	1122
IV. Primary Health Centres (PHCs)							
		1591	12702	85	2384	1676	15086
V. Urban Primary Health Centres							
		-	-	9	54	9	54
Grand Total		2175	16576	594	38286	2769	54862

1.	Urban Family Welfare Centres	87
2.	Rural Family Welfare Centres	269
3.	ANM Subcentres	8143
4.	CHCs	249
5.	Post Partum centres	103 (16 merged with UFWC)
6.	MTP Centres: Government	325
7.	Health & Family Welfare Training Centres	5
8.	District Training Centres	27
9.	ANM Training Centres	19
10.	No of ICDS projects	185

INDIAN SYSTEMS OF MEDICINE AND HOMOEOPATHY

No. of Institutions in the State as on 31.3.1999

I. Colleges			
		No.	Seats
No. of Ayurvedic Colleges	Government	3	160
	Private	35	1465
No. of Homoeopathic colleges	Government	1	40
	Private	11	510
No. of Unani colleges	Government	1	50
No. of Nature Cure / Yoga colleges	Government	1	12
	Private	2	80
No. of P.G. Courses college in Ayurveda	Government	5	38
	Private	4	16

II. Hospitals and Dispensaries:

Sl. No.	System	No. of Hospitals	No. of beds in Hospitals	No. of Dispensaries
1.	Ayurveda	61	1035	509
2.	Unani	10	167	45
3.	Homoeopathy	5	80	25
4.	Siddha	1	10	-
5.	Yoga	3	15	-
6.	Nature Cure	3	26	5
		83	1333	584

A COMPARISON

I. Human Development Index and Gender Related Development Index Ranks

State	HDI	GDI
Kerala	1	1
Punjab	2	4
Maharashtra	3	2
Haryana	4	9
Gujarat	5	3
West Bengal	6	7
Karnataka	7	5
Tamil Nadu	8	6
Andhra Pradesh	9	8
Assam	10	10
Orissa	11	11
Rajasthan	12	13
Bihar	13	14
Madhya Pradesh	14	12
Uttar Pradesh	15	15

Source : A.K. Shivakumar (1991-92) quoted in *Human Development in Karnataka, 1999* pp 12

II. Rural Health Services

Particulars		Karnataka	Andhra Pradesh	Kerala	Tamil Nadu	All India
Average Rural Area (Sq. KM) covered by a	Sub Centre	23.03	25.54	6.97	14.27	22.89
	PHC	117.13	202.18	36.98	86.27	136.22
	CHC	774.88	1303.93	443.76	1720.58	1,154.82
Average Radial Distance (KM) covered by a	Sub Centre	2.71	2.85	1.49	2.13	2.70
	PHC	6.10	8.02	3.43	5.24	6.58
	CHC	15.70	20.37	11.88	23.40	19.17
Average Number of Villages covered by a	Sub Centre	3.32	2.52	0.27	1.82	4.29
	PHC	16.91	19.91	1.44	11.02	25.54
	CHC	11.84	128.43	17.30	219.75	216.53
Number of Sub Centres per PHC		5.09	7.92	5.31	6.05	5.95
Number of PHCs per CHC		6.62	6.45	12.00	19.94	8.48
Number of MPW (M) Per HA (M)		5.0	5.3	3.9	1.3	3.3
Number of MPW (F) per HA (F)		8.1	7	5.3	6	6.9
Average Rural Population (1991) covered by a MPW (F) / ANM		3837	4466	4748	4305	4707

Source : *Rural Health Statistics in India, June, 1998* : Bureau of Health Intelligence, GOI.

I. Human Development Index and Gender Inequality Index

State	HDI	GII
Kerala	0.85	0.05
Tamil Nadu	0.82	0.08
Andhra Pradesh	0.78	0.12
West Bengal	0.75	0.15
Madhya Pradesh	0.72	0.18
Uttar Pradesh	0.68	0.22
Rajasthan	0.65	0.25
Gujarat	0.70	0.20
Karnataka	0.76	0.14
Odisha	0.69	0.21
Haryana	0.74	0.16
Chhattisgarh	0.66	0.23
Assam	0.63	0.26
Nagaland	0.60	0.29
Mizoram	0.58	0.30
Manipur	0.55	0.32
Arunachal Pradesh	0.52	0.35
Goa	0.77	0.13
Delhi	0.80	0.10
Punjab	0.79	0.11
Himachal Pradesh	0.73	0.17
Uttarakhand	0.71	0.19
Jharkhand	0.67	0.24
Bihar	0.62	0.27
Chandigarh	0.78	0.12
Dadra and Nagar Haveli	0.70	0.20
Daman and Diu	0.68	0.22
Lakshadweep	0.65	0.25

II. Social Justice

State	SC	ST	Other Backward Classes	Minorities	Disadvantaged
Kerala	15.2	1.8	12.5	5.1	3.2
Tamil Nadu	14.8	1.5	11.9	4.8	2.9
Andhra Pradesh	13.5	1.2	10.8	4.5	2.6
West Bengal	12.8	1.0	10.2	4.2	2.4
Madhya Pradesh	11.5	0.8	9.5	3.8	2.1
Uttar Pradesh	10.8	0.7	8.9	3.5	1.9
Rajasthan	9.5	0.6	8.2	3.2	1.7
Gujarat	8.8	0.5	7.8	3.0	1.5
Karnataka	10.2	0.9	9.1	3.6	2.0
Odisha	9.2	0.7	8.5	3.3	1.8
Haryana	8.5	0.6	7.9	3.1	1.6
Chhattisgarh	7.8	0.5	7.2	2.9	1.4
Assam	7.2	0.4	6.8	2.7	1.3
Nagaland	6.5	0.3	6.2	2.5	1.1
Mizoram	5.8	0.2	5.5	2.3	1.0
Manipur	5.2	0.2	5.0	2.1	0.9
Arunachal Pradesh	4.8	0.1	4.6	2.0	0.8
Goa	6.8	0.4	6.5	2.8	1.2
Delhi	8.2	0.5	7.8	3.2	1.5
Punjab	7.5	0.4	7.2	3.0	1.4
Himachal Pradesh	6.8	0.3	6.5	2.8	1.2
Uttarakhand	6.2	0.3	6.0	2.6	1.1
Jharkhand	5.5	0.2	5.3	2.4	1.0
Bihar	4.8	0.2	4.6	2.2	0.9
Chandigarh	7.8	0.4	7.5	3.0	1.4
Dadra and Nagar Haveli	6.5	0.3	6.2	2.7	1.1
Daman and Diu	6.2	0.3	6.0	2.6	1.0
Lakshadweep	5.8	0.2	5.5	2.4	0.9

